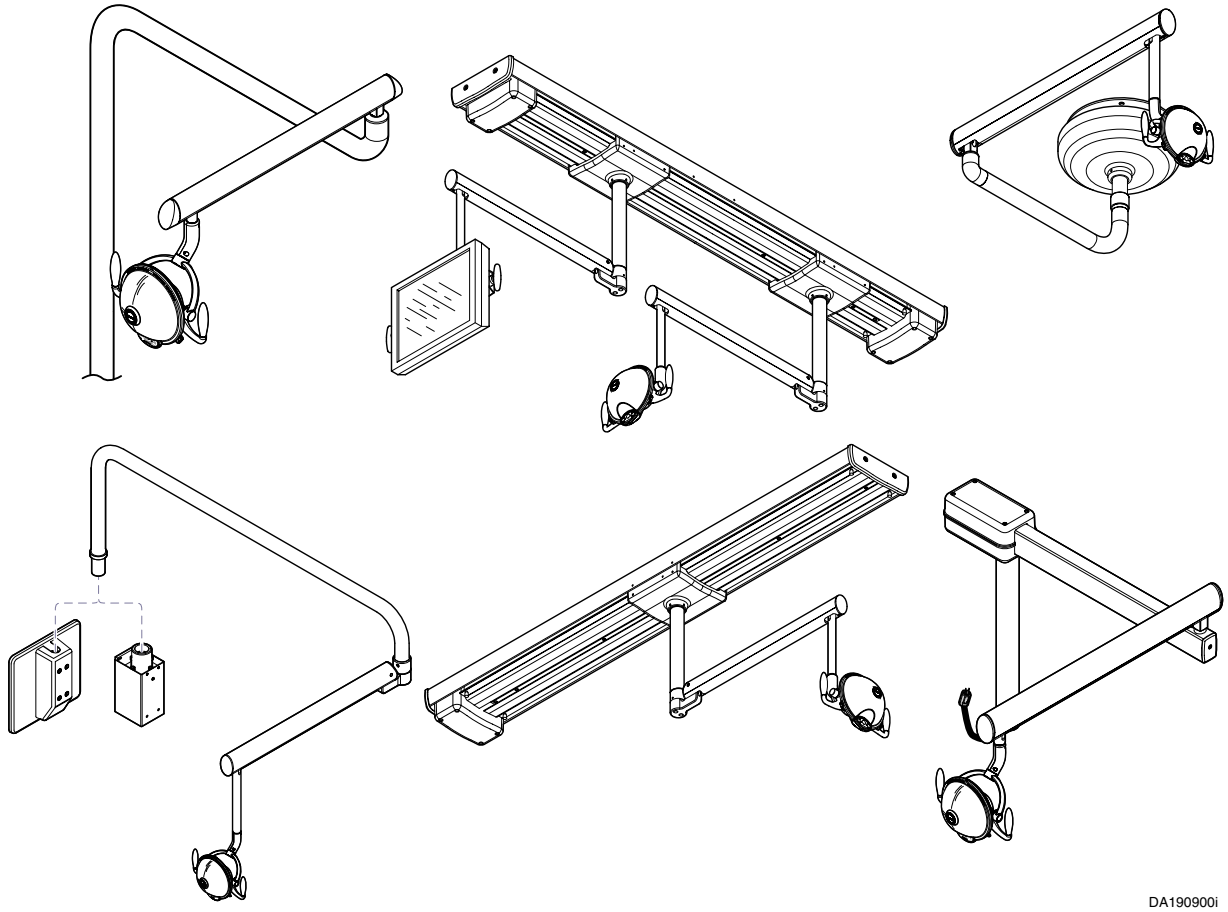
Midmark Dental Lights

Ceiling Mounted
Chair Mounted
Track Mounted
Universal Mounted
Wall/Cabinet Mounted

Serial Number Prefixes:
NW, RE & V

Theory of Operation & Component Repair Guide



DA190900i

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

SF-1622

Part Number 004-0284-00 Rev. I (7/5/11)

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General Safety Instructions

Safety First: The primary concern of Midmark Corporation is that this light is maintained with the safety of the patient and staff in mind. To assure that services and repairs are completed safely and correctly, proceed as follows:

(1) Read this entire manual before performing any services or repairs on this light.

(2) Be sure you understand instructions contained in this manual before attempting to service or repair light.

Safety Alert Symbols

Throughout this manual are safety alert symbols that call attention to particular procedures. These items are used as follows:

DANGER
A DANGER is used for an imminently hazardous operating procedure, practice, or condition which, if not correctly followed, will result in loss of life or serious personal injury.

WARNING
A WARNING is used for a potentially hazardous operating procedure, practice, or condition which, if not correctly followed, could result in loss of life or serious personal injury.

CAUTION
A CAUTION is used for a potentially hazardous operating procedure, practice, or condition which, if not correctly followed, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

EQUIPMENT ALERT
An EQUIPMENT ALERT is used for an imminently or potentially hazardous operating procedure, practice, or condition which, if not correctly followed, will or could result in serious, moderate, or minor damage to unit.

NOTE
A NOTE is used to amplify an operating procedure, practice or condition.

Warranty Instructions

Refer to Midmark “Limited Warranty” printed in the Installation and Operation Manual for warranty information. Failure to follow guidelines listed below will void the warranty and/or render the Light unsafe for operation.

- In event of a malfunction, do not attempt to use light until necessary repairs have been made.
- Do not attempt to disassemble light, replace malfunctioning or damaged components, or perform adjustments unless you are one of Midmark’s authorized service technicians.
- Do not substitute parts of another manufacturer when replacing inoperative or damaged compo nents. Use only Midmark replacement parts.

SECTION I
GENERAL INFORMATION

1.1 Scope of Manual

This manual contains detailed troubleshooting, scheduled maintenance, maintenance, and service instructions for the Midmark Dental Light. This manual is intended to be used by Midmark's authorized service technicians.

1.2 How to Use Manual

A. Manual Use When Performing Scheduled Maintenance.

(1) Perform inspections and services listed in Scheduled Maintenance Chart (Refer to para 3.1).

(B) If a component is discovered to be faulty or out of adjustment, replace or adjust component in accordance with maintenance / service instructions (Refer to para 4.1).

B. Manual Use When Unit Is Malfunctioning And Cause Is Unknown.

(1) Perform an operational test on light (Refer to para 2.1).

(2) Perform troubleshooting procedures listed in Troubleshooting Guide (Refer to para 2.2).

(3) If a component is discovered to be faulty or out of adjustment, replace or adjust component in accordance with maintenance / service instructions (Refer to para 4.1).

C. Manual Use When Damaged Component Is Known.

(1) Replace or adjust component in accordance with maintenance / service instructions (Refer to para 4.1).

1.3 Description of Midmark Dental Light

A. General Description (See Figure 1-1).

The Midmark Dental Light is a dental exam / procedure light designed for the general dentistry market. The chair mounted light version is powered by a universal power supply (contains a transformer and other control switches) which is typically mounted in a junction box. The ceiling / wall / cabinet / track, or universal light version is powered by a transformer located within the light's mounting housing. The lighthead is operated thru a touchpad membrane located on the lighthead itself. The light can be mounted a variety of ways including chair mounted, ceiling mounted, wall mounted, cabinet mounted, universal mounted, and track mounted.

B. Major Serviceable Components (See Figure 1-1).

The major serviceable components for the light and arm portion of the dental light system are the lighthead assembly (1) which includes the touchpad membrane switch panel (2), light socket (3), lighthead pivot joint tension assemblies (4a, 4b, and 4c), and focus mechanism (5), the flex arm assembly (6) which contains the light PC board (7) and spring tension assembly (8).

The ***chair mounted light*** also contains a universal power supply (9) which contains the transformer (10), pressure switch (11), circuit breaker (12), and two line fuses (13).

The ceiling mounted light also contains a transformer (14), line fuse (15), and a leveling assembly (16).

The ***wall mounted light*** also contains a transformer (17) and line fuses (18).

The ***cabinet mounted light*** also contains a transformer (19) and line fuses (20).

The ***universal mounted light*** also contains a transformer (21) and line fuses (22).

The t***rack mounted light*** also contains a transformer (23) and a line fuse (24).

C. Theory of Operation (Refer to Figures 5-1 thru 5-6 for electrical schematics / wiring diagrams.

Electrical Power

115 VAC +/- 11.5 VAC line voltage is supplied thru line fuse(s) to the transformer. If too much current is drawn by lighting system's circuitry or if there is a voltage spike, two fuses are provided to protect the Light's Electrical System. The transformer steps the line voltage down and supplies a secondary output voltage of 19.4 +/- 2.0 VAC to the light control board based on an ideal 115 VAC input.

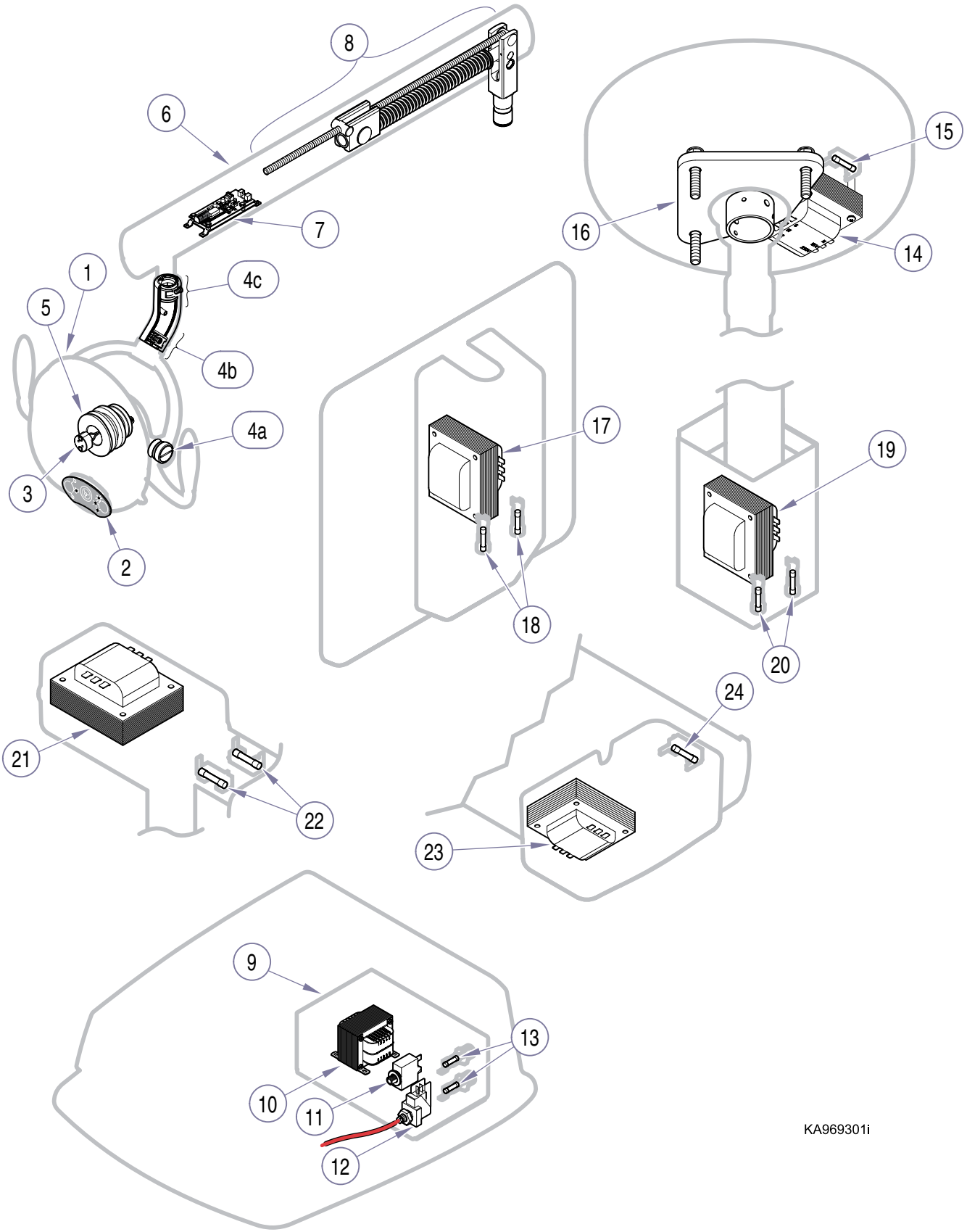


Figure 1-1 Major Components

Light Pendant Operation

The **POWER** button allows the operator to toggle between three modes; the **STANDBY** mode, **ON** mode, and **AUTO ON** mode. Each time the operator presses the **POWER** button, a signal is sent to light control board incrementing its Power setting to the next mode.

The **INTENSITY** button allows the operator to toggle between three modes; **low intensity** mode, **medium** intensity mode, and **high intensity** mode. When in **ON** or **AUTO ON** power mode, the light control board is in one of three light intensity modes. When the operator presses the **INTENSITY** button, a signal is sent to light control board incrementing its Intensity setting to the next mode.

The **COMPOSITE** button allows the operator to toggle between **normal** and **composite mode**. NOTE: The **INTENSITY** button only works in **normal** mode. When in **ON** or **AUTO ON** power mode, the light control board is also in either **normal** or **composite** light intensity mode. When the operator presses the **COMPOSITE** button, a signal is sent to light control board, incrementing its setting to the next mode.

Light Control Board Operation

When the operator toggles the **POWER** button to the **ON** or **AUTO ON** mode, a signal is sent to the light control board, activating it. The light control board then determines what mode the light **INTENSITY** button is set to and then provides the appropriate voltage output which is applied across the light bulb. The voltage output for **low intensity** mode is 12.8 VAC, output for **medium intensity** mode is 14.4 VAC, and output for **high intensity** mode is 15.7 VAC. The light control board adjusts the output voltage when a button is pressed. The control system can accommodate a wide range of input voltages, yet still achieve the correct output voltage for the currently selected light intensity mode. So, even if the light control board is not seeing an ideal input voltage, it will still generate the correct output voltage for the selected intensity mode.

When the operator toggles the **COMPOSITE** button to the composite mode, a signal is sent to the light control board. The light control board then provides a voltage output of 9.8 VAC which is applied across the light bulb.

When the light control board is in **AUTO ON** mode, the light functions the same as in **ON** mode with one exception; the light is **ON** only when the flex arm is positioned below the horizontal plane. The light control board has a photo receptor switch mounted on it; it is mounted to a stationary portion of the flex arm. The flex arm also has a trigger mounted to a moving portion of the flex arm. When the operator moves the flex arm above the horizontal plane, the trigger moves away from the photo receptor, no longer breaking the receptor beam. This signals the light control board to stop voltage output to the light bulb. When the operator moves the flex arm below the horizontal plane, the trigger breaks the beam of the photo receptor, signaling the light control board to provide voltage output to the light bulb.

1.4 Standard Torque Specifications

The following standard torque specifications in Table 1-1 apply to the hardware used on the unit unless otherwise listed elsewhere in the service procedures or parts illustrations.

Table 1-1. Torque Specifications

Hardware Size*	Torque Values
#6	11 to 21 inch-lbs. (1.2 to 2.3 N•M)
#8	20 to 30 inch-lbs. (2.2 to 3.3 N•M)
#10	32 to 42 inch-lbs. (3.6 to 4.8 N•M)
1/4 inch	75 to 85 inch-lbs. (8.5 to 9.6 N•M)
5/16 inch	18 to 22 ft.-lbs. (24.4 to 29.8 N•M)
3/8 inch	31 to 35 ft.-lbs. (42.0 to 47.5 N•M)
1/2 inch	50 to 60 ft.-lbs. (67.8 to 81.4 N•M)

*** All hardware should be grade 5 or above.**

1.5 Specifications

Factual data for the dental light is provided in Table 1-2. Also, see Figure 1-3, Sheets 1 thru 6. for Dimensions and Range of Motion information.

Table 1-2. Specifications

Description	Data
Weight of a Unit:	
Chair Mounted Console Version:	
Without Shipping Carton	26 lbs (11.8 kg)
With Shipping Carton	31 lbs (14.0 kg)
Chair Mounted LR Version:	
Without Shipping Carton	36 lbs (16.3 kg)
With Shipping Carton	41 lbs (18.6 kg)
Ceiling Mounted Version:	
Without Shipping Carton	47 lbs (21.3 kg)
With Shipping Carton	59 lbs (26.7 kg)
Wall Mounted Version:	
Without Shipping Carton	68 lbs (30.8 kg)
With Shipping Carton	92 lbs (41.7 kg)
Cabinet Mounted Version:	
Without Shipping Carton	8 lbs (21.8 kg)

With Shipping Carton ..... 72 lbs (32.6 kg)
Universal Mounted Version:
Without Shipping Carton ..... 27 lbs (12.2 kg)
With Shipping Carton ..... 42 lbs (19.0 kg)
Track Mounted Version:
Without Shipping Carton ..... 55 lbs (24.9 kg)
With Shipping Carton ..... 66 lbs (29.9 kg)

Electrical Requirements:
Chair Mounted LR or Console Version:
115 V - 300 Watt Power Supply..... 115 VAC ±10%
3.0 Amp, 50/60 HZ
230 V - 300 Watt Power Supply ...230 VAC ± 10%
1.5 amp, 50/60 HZ
Ceiling, Track, Wall,
Cabinet, and Universal
Mounted Versions: .....115 /230 VAC +/-10%,
1.2 / 0.6 amp, 50/60 HZ,
Single Phase

Line Fuses for 300W
Universal Power Supply..... 4A, 250 VAC
5 x 20 mm, Type T (Time Delay)

Line Fuse for all other models
(transformer only)..... Type 3AG, 1.5A, 250 VAC
1/4 x 1-1/4 in., Type T (Time Delay)

Bulb Type ..... 17 VAC, 95W, GY 6.35 size,

Color Temperature Bulb..... 3000 K
Light Assy.....5000K +/- 500K
(w/Reflector)

Light Intensity:
Low Setting..... 1400 foot candles (15,000 LUX)
Medium Setting .. 1950 foot candles (21,000 LUX)
High Setting..... 2500 foot candles (27,000 LUX
Composite Mode .... 550 foot candles (5,900 LUX)
[Pattern Size = 3.3” x 7.5”]

Classifications ..... Class 1, Type B Applied Part,
Ordinary Equipment,
Intermittent Operation

Certifications:
Midmark Corporation.....ISO-9001

Complies to the applicable
requirements of: UL-2601-1,
CAN/CSA-C22.2 #601.1-M90
MDD 93/42/EEC, Annex VII
[EN60601-1, EN60601-1-2]

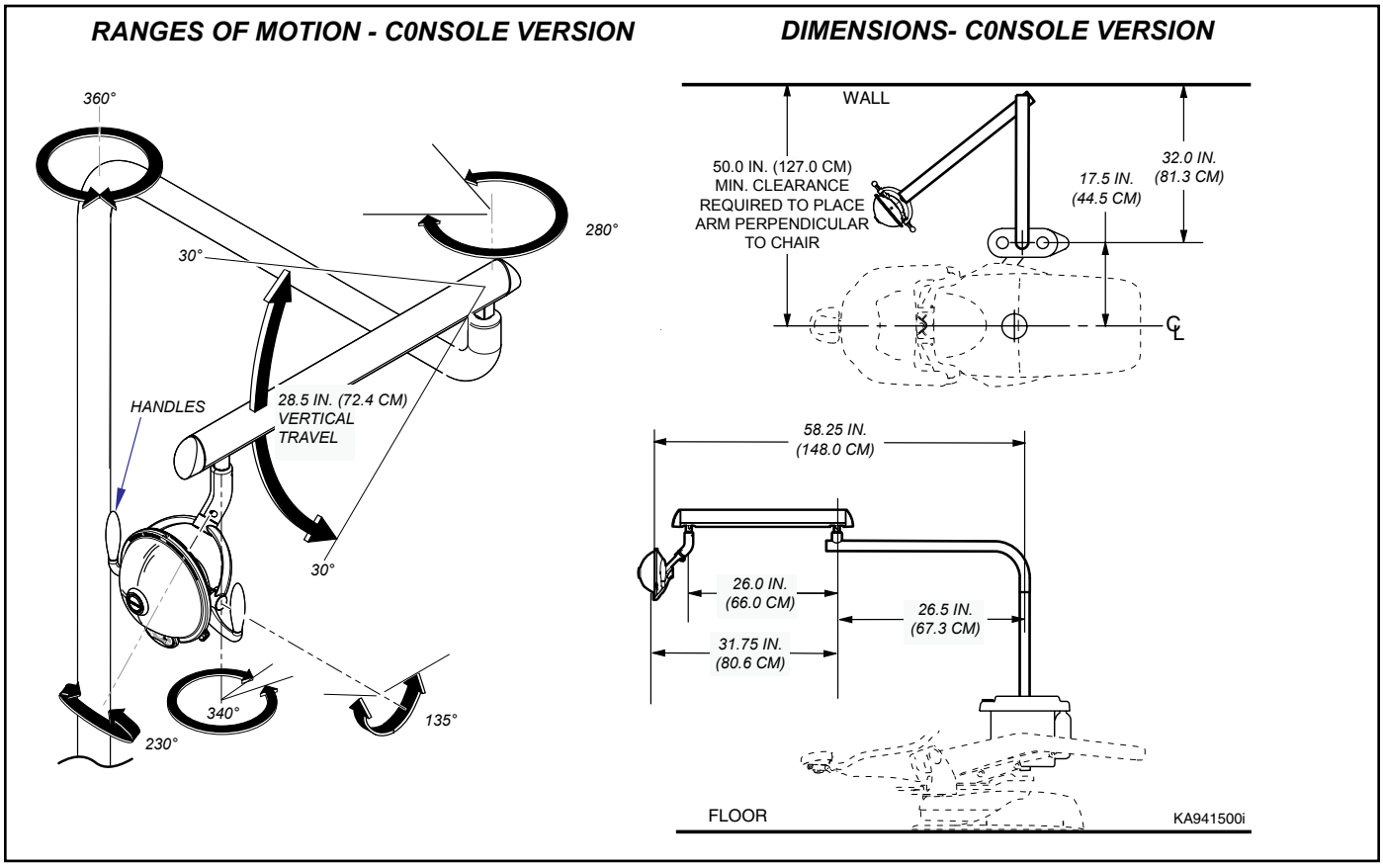


Figure 1-3 (Sheet 1 of 6) Specifications - Chair Console Mounted Light

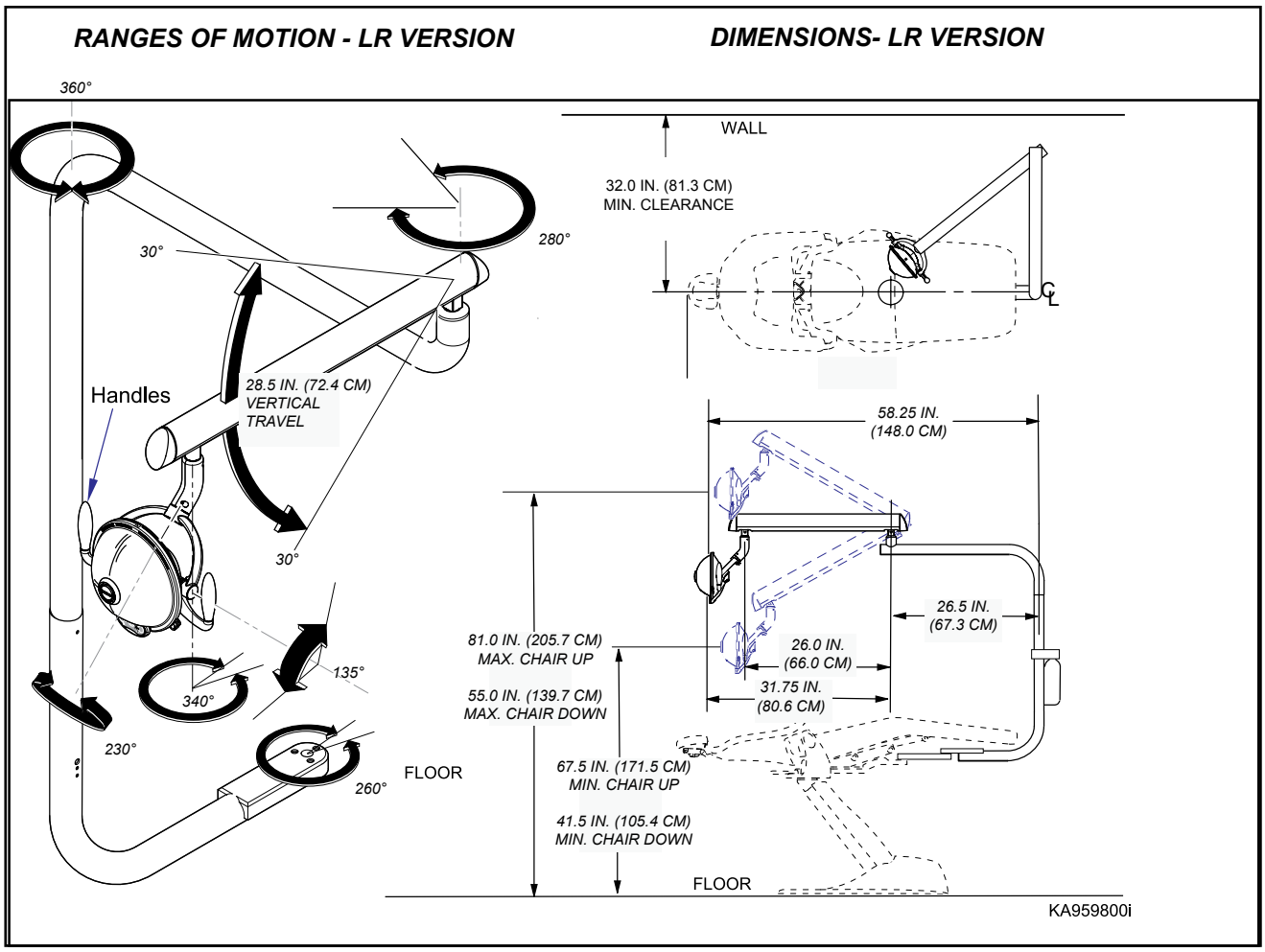


Figure 1-3 (Sheet 2 of 6) Specifications - Chair LR Mounted Light

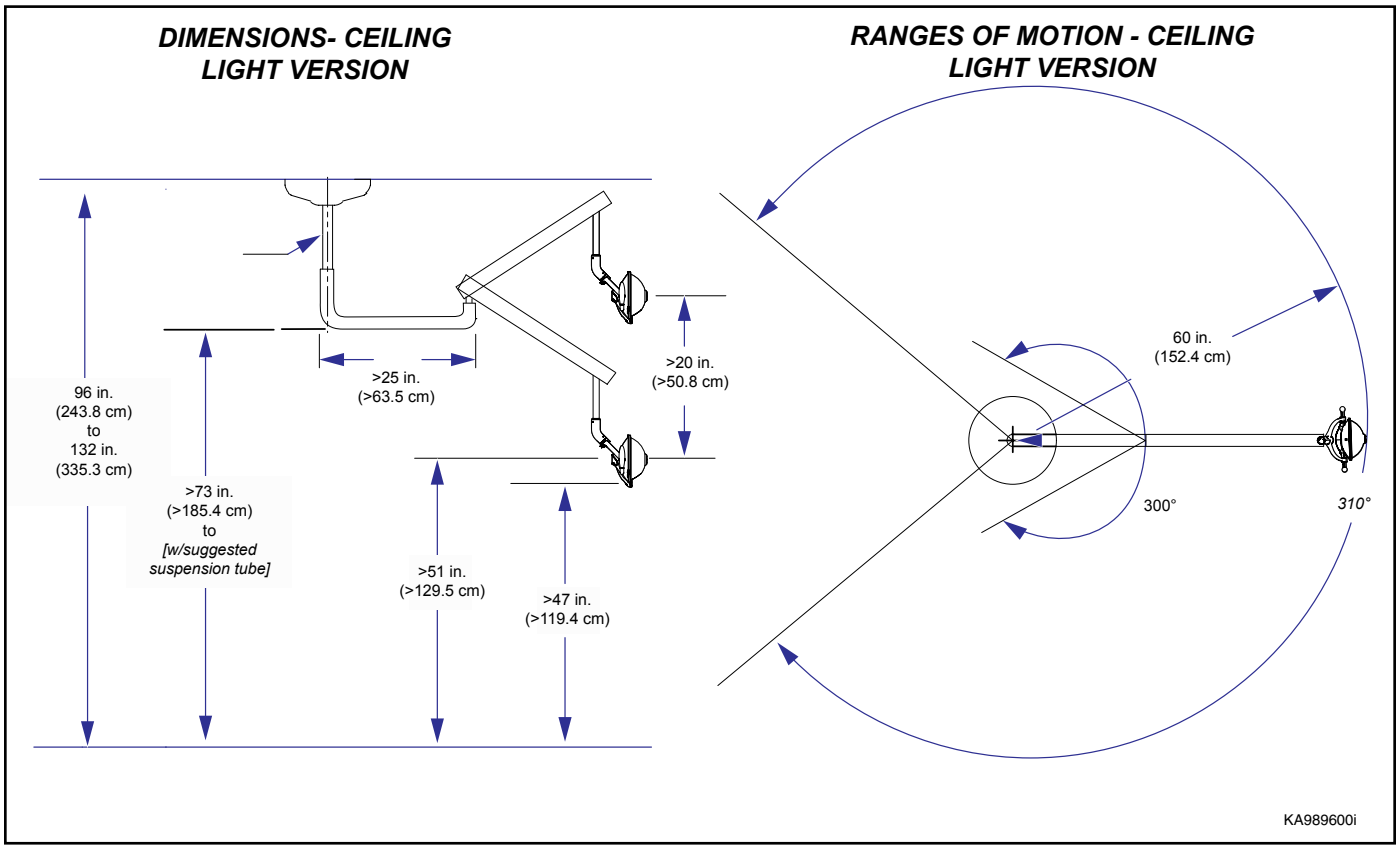
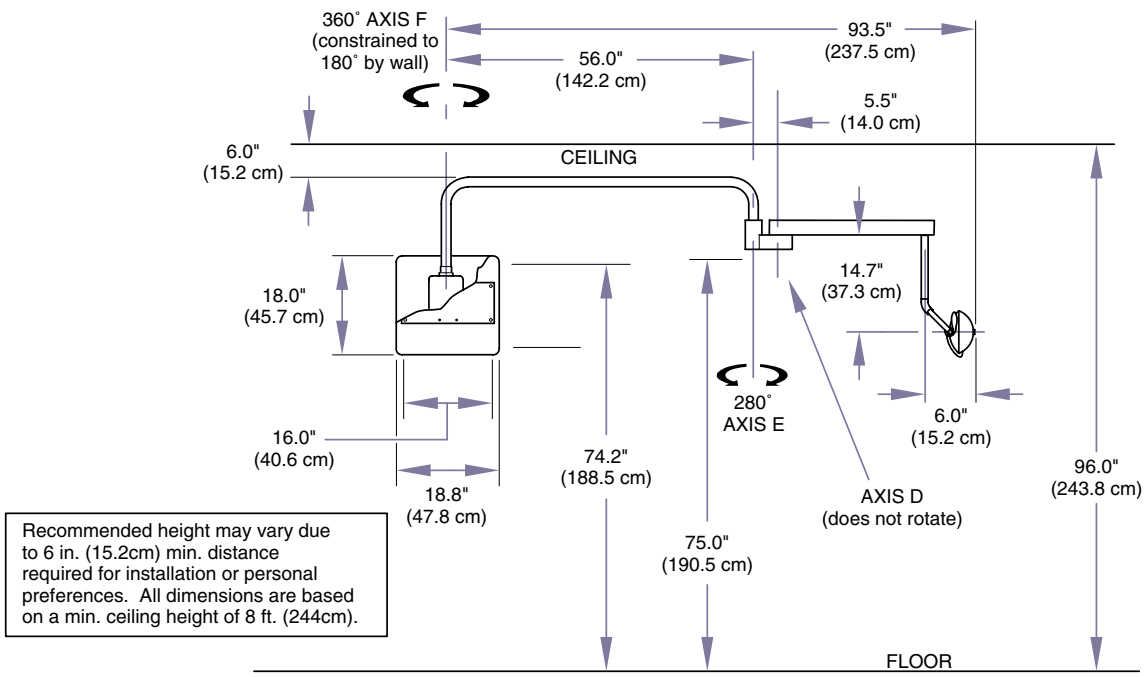


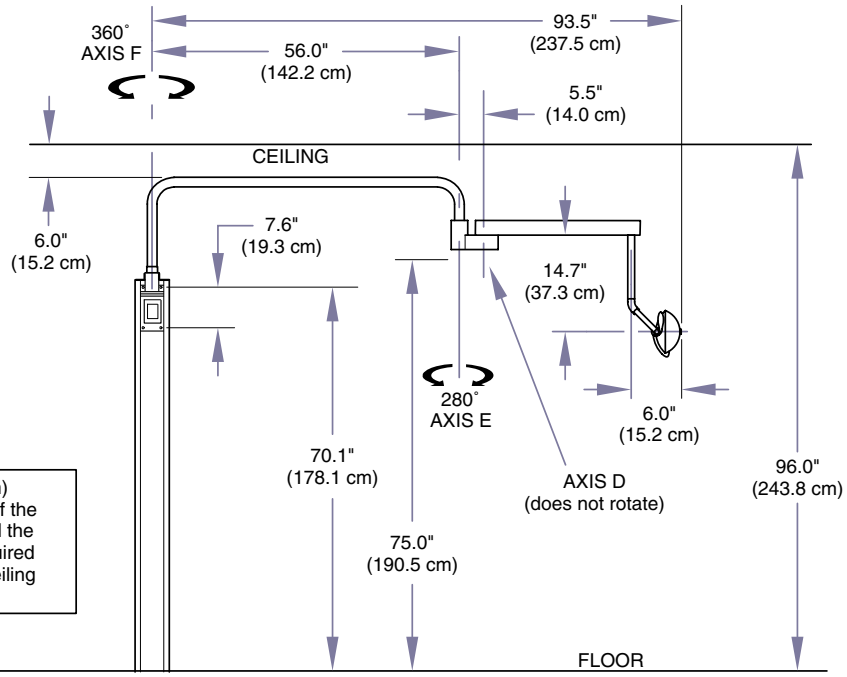
Figure 1-3 (Sheet 3 of 6) Specifications - Ceiling Mounted Light

DIMENSIONS / RANGES OF MOTION-
WALL LIGHT VERSION



Recommended height may vary due to 6 in. (15.2cm) min. distance required for installation or personal preferences. All dimensions are based on a min. ceiling height of 8 ft. (244cm).

DIMENSIONS / RANGES OF MOTION-
CABINET LIGHT VERSION



Recommended min. 8 ft. (244cm) ceiling height due to the height of the central free standing cabinet and the 6 in. (15.2cm) min. distance required between the light arm and the ceiling for installation.

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Figure 1-3 (Sheet 4 of 6) Specifications - Wall / Cabinet Mounted Light

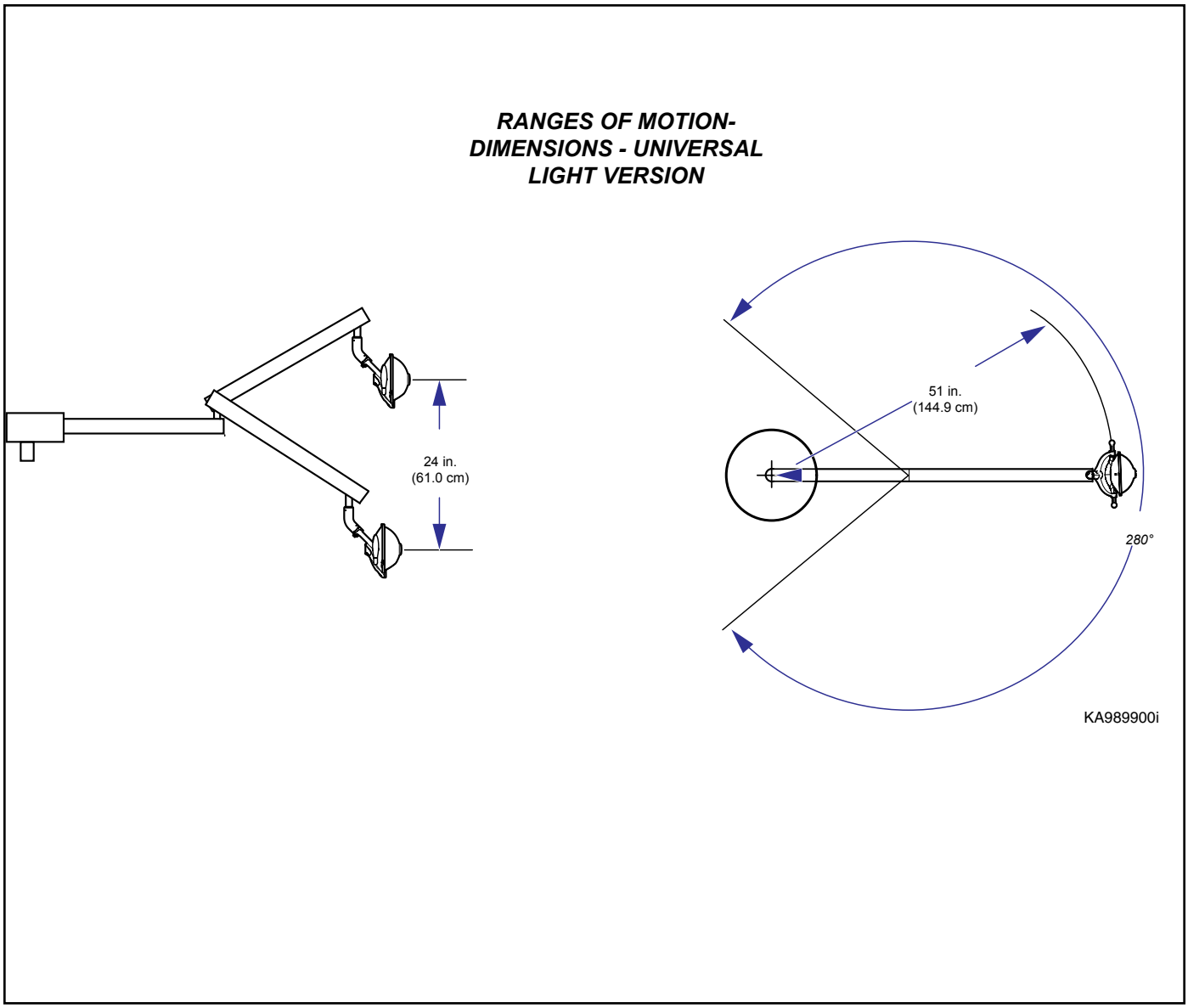

Figure 1-3 (Sheet 5 of 6) Specifications - Universal Mounted Light

RANGES OF MOTION / DEMENSIONS - TRACK LIGHT VERSION

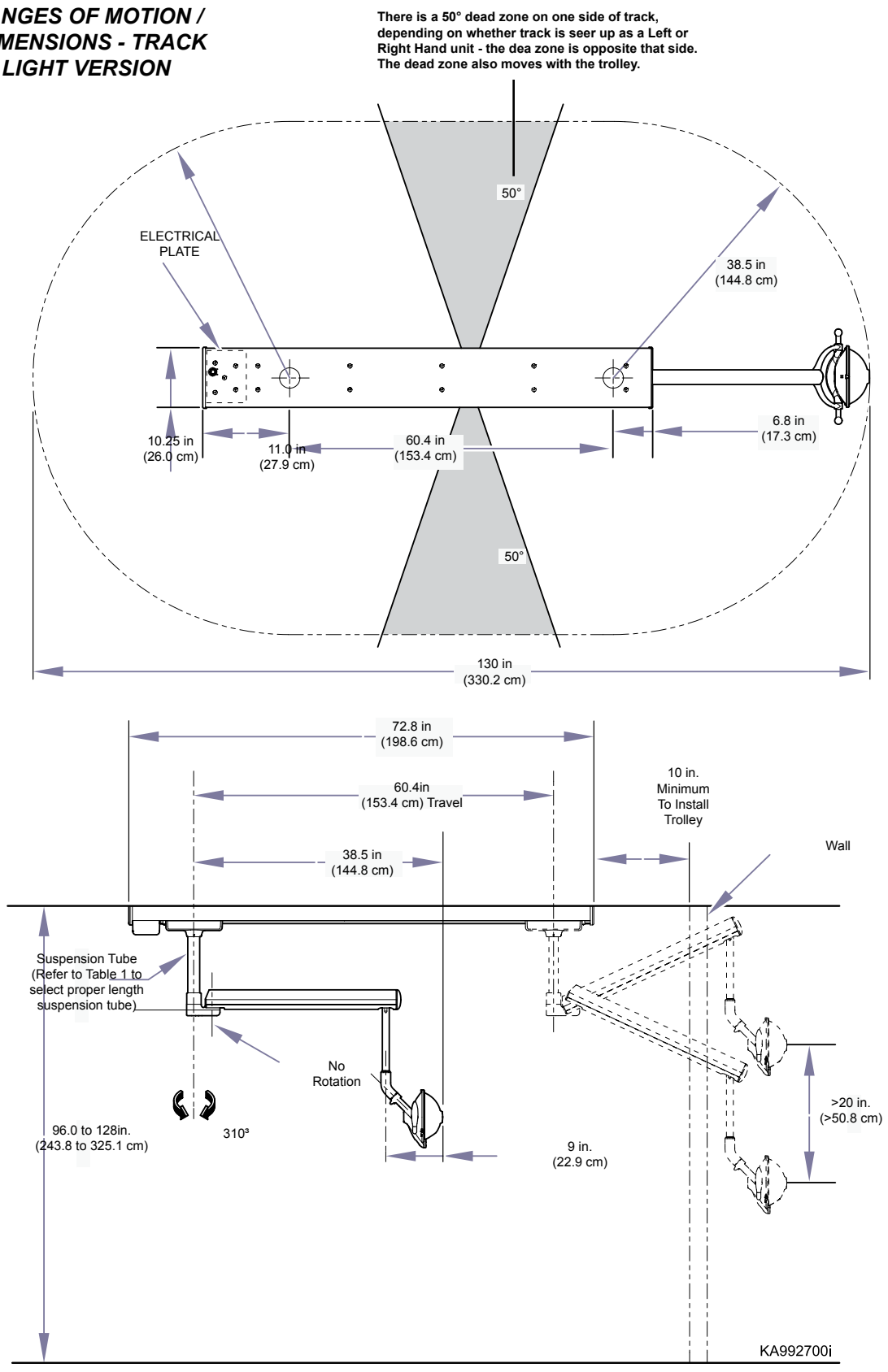
There is a 50° dead zone on one side of track, depending on whether track is seer up as a Left or Right Hand unit - the dea zone is opposite that side. The dead zone also moves with the trolley.
50°
ELECTRICAL PLATE
38.5 in (144.8 cm)
10.25 in (26.0 cm)
11.0 in (27.9 cm)
60.4 in (153.4 cm)
6.8 in (17.3 cm)
50°
130 in (330.2 cm)
72.8 in (198.6 cm)
60.4in (153.4 cm) Travel
10 in. Minimum To Install Trolley
Wall
38.5 in (144.8 cm)
Suspension Tube (Refer to Table 1 to select proper length suspension tube)
No Rotation
310°
96.0 to 128in. (243.8 to 325.1 cm)
9 in. (22.9 cm)
>20 in. (>50.8 cm)
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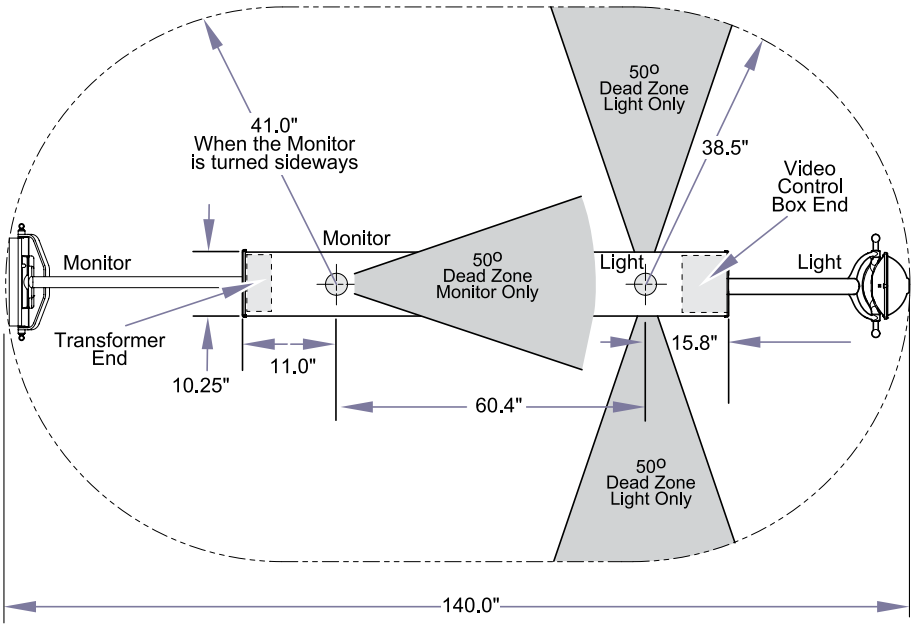
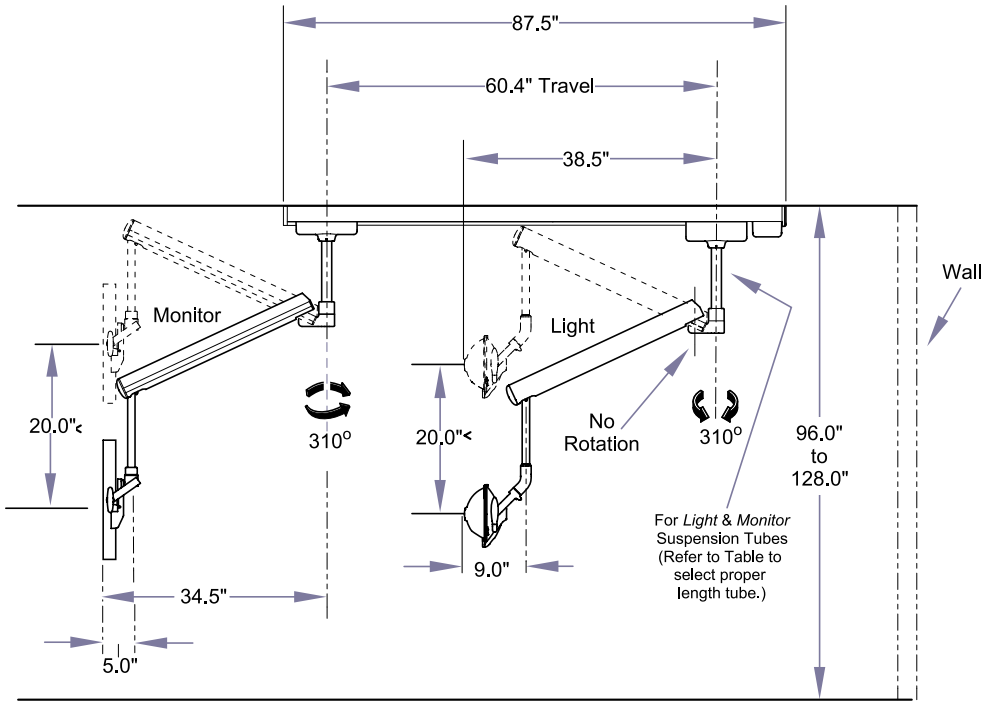
Figure 1-3 (Sheet 6 of 6) Specifications - Track Mounted Light

RANGES OF MOTION / DEMENSIONS - TRACK LIGHT - MONITOR VERSION

The ***Light*** has a 50° "Dead Zone" on one side of track, depending on whether track is set up as a Left or Right Hand unit - the "Dead Zone" is Opposite that side. The "Dead Zone" moves with the trolley. The ***Monitor*** "Dead Zone" is also shown.





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1.6 Parts Replacement Ordering

If replacement part(s) are required, order part(s) directly from factory as follows:

(1) Refer to Figure 1-4 to determine location of model number and serial number and record this data.

(2) If replacement part(s) are required, order part(s) directly from factory as follows: Refer to Parts List to determine item numbers of parts, part numbers, descriptions, and quantities needed and record this data (Refer to para 6.1).

NOTE
To assure expedient service and correct parts you must have correct Model and Serial Number of light.

(3) Determine installation date of light and record this data. Call Midmark (1-800 643-6275) and ask for Technical Service Department.

Table 1-3. Special Tool List

Description of Special Tool	Manufacturer's Name / Address / Phone	Manufacturer's Part Number	Purpose of Special Tool
Multimeter *	Commercially Available	Any Type	Used to perform continuity and voltage checks.
Torque Wrench *	Commercially Available	Any Type	Used to tighten nuts or screws to specified values.
Snap Ring Pliers [capable of at least 1-3/16 in. (30.2 mm) spread]	Commercially Available	Any Type	Used to remove focus housing nut which secures reflector assembly onto reflector mount.
Carpenter's Level	Commercially Available	Any Type	Used to level the light arms to prevent drifting and maximize ease of lighthead positioning.
*** Tool should be calibrated annually to ensure proper specifications are met.**			

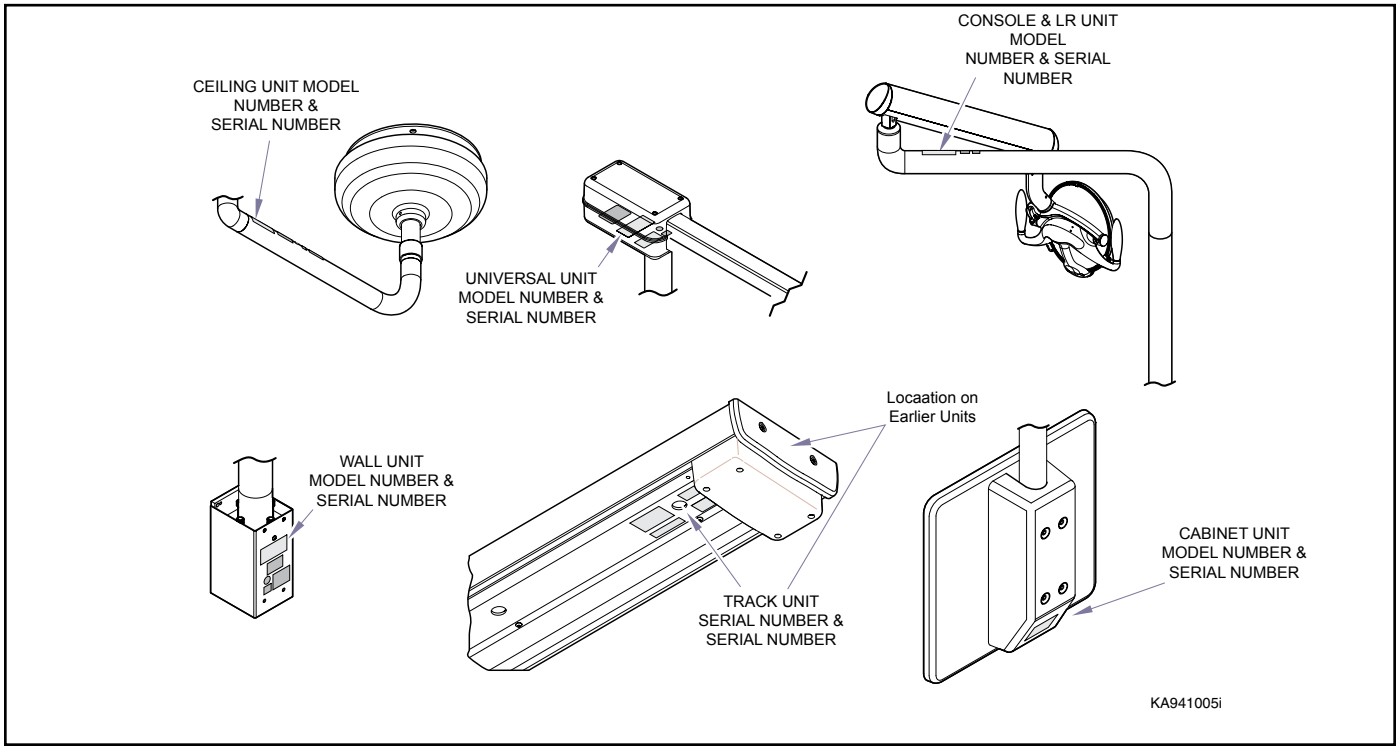
CONSOLE & LR UNIT MODEL NUMBER & SERIAL NUMBER
CEILING UNIT MODEL NUMBER & SERIAL NUMBER
UNIVERSAL UNIT MODEL NUMBER & SERIAL NUMBER
Locaation on Earlier Units
WALL UNIT MODEL NUMBER & SERIAL NUMBER
TRACK UNIT SERIAL NUMBER & SERIAL NUMBER
CABINET UNIT MODEL NUMBER & SERIAL NUMBER
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Figure 1-4 Model Number - Serial Number Location

SECTION II
TESTING AND TROUBLESHOOTING

2.1 Operational Test

In order to effectively diagnose a malfunction of light, it may be necessary to perform an operational test as follows:

WARNING
Refer to the Operator's Manual for complete instructions on operating the light. Failure to do so could result in personal injury.

NOTE
The Operational Test, for the most part, only de scribes what should happen when light is operated. If the light does something other than described, a problem has been discovered. Refer to Trouble shooting Guide to determine cause of problem and its correction.

WARNING
When performing various checks with light plugged in and covers off use extreme care to prevent accidental electrical shock. Failure to comply could cause severe injury.

(1) If light is part of an operatory, turn **MASTER ON / OFF** switch (1, Figure 2-1) to ***ON***.

(2) **Observe.** The lighthead (2) should not illumi nate.

(3) Press **POWER** button (3).

(4) **Observe.** The lighthead (2) should illuminate.

(5) Press **INTENSITY** button (4) while watching light intensity of lighthead. Wait two to three seconds and repeat. Repeat a third time.

(6) **Observe**. Each time **INTENSITY** button (4) is pressed, lighthead (2) should toggle between **Medium** (A), ***High*** (B), and ***Low*** (C) intensity modes. Also, associated indicator lamp (A, B, or C) should illuminate to indicate currently selected intensity mode.

The light intensity of lighthead at three inten sity modes should be:
Low Setting - 1700 fc (18,299 lux)
Medium Setting - 2500 fc (26,910 lux)
High Setting - 3300 fc (35,521 lux)

(7) Press **COMPOSITE** button (5).

(8) **Observe**. The light intensity of lighthead (2) should decrease significantly. The light inten sity of lighthead in ***Composite*** mode should be 700 fc (7,535 lux).

(9) Press the **COMPOSITE** button (5) again to return to standard light setting (normal mode).

SECTION II
TESTING AND TROUBLESHOOTING

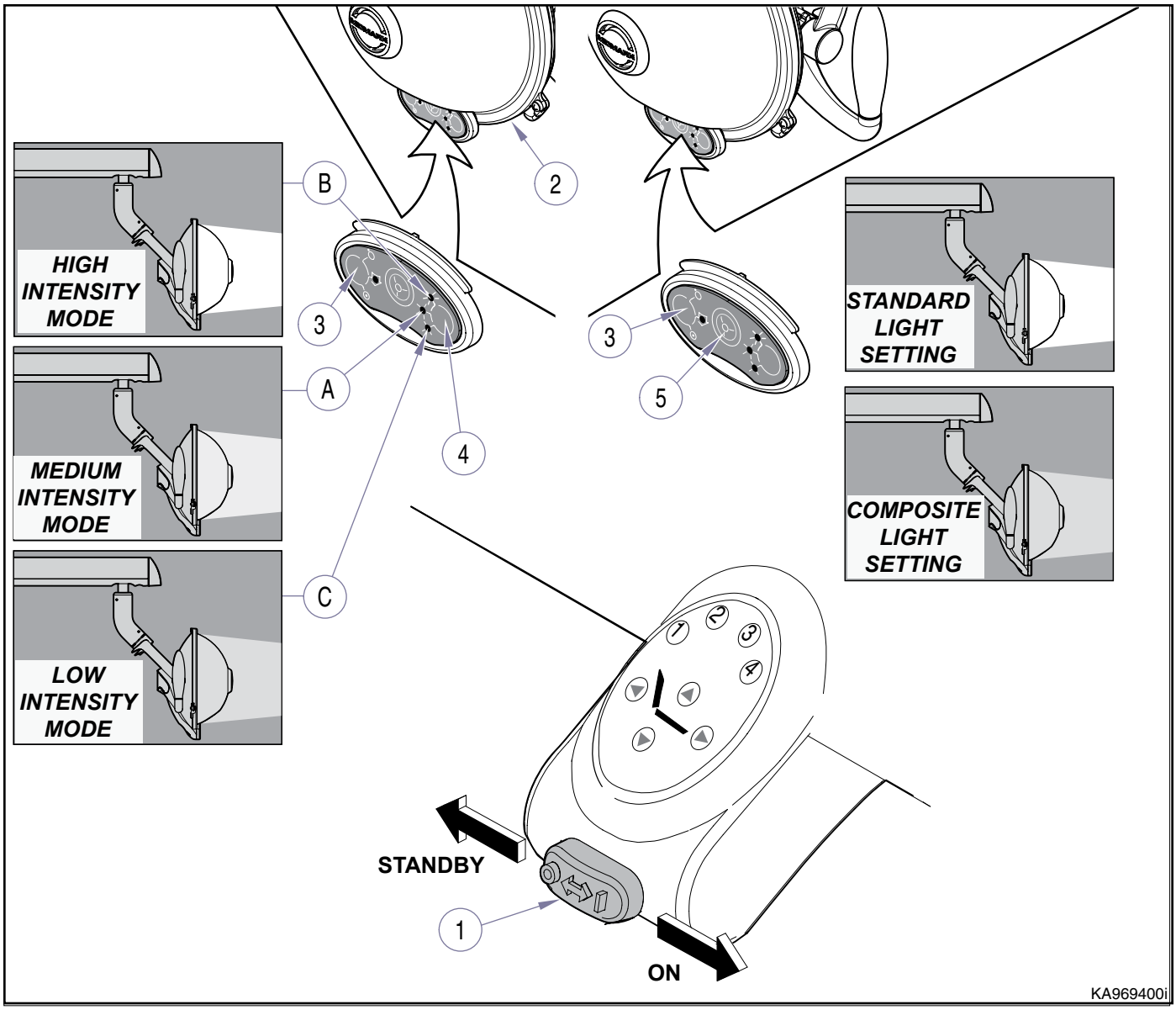


Figure 2-1

(10) Press **POWER** button (1, Figure 2-2).

(11) **Observe**. The ***AUTO ON*** indicator lamp (2) should illuminate, indicating the light is in ***AUTO ON*** mode.

12) Raise and lower lighthead (3) while observing.

(13) **Observe**. When flex arm (4) of light is lowered below horizontal plane (A), lighthead should automatically turn ***ON***. When flex arm (4) of light is raised above the horizontal plane (B), lighthead should automatically turn ***OFF***.

14) Press **Power** button (1).

(15) **Observe**. The **AUTO ON** indicator lamp (2) should go out, indicating the light is in OFF mode. The lighthead should not be illuminating.

(16) Press **Power** button (1) to turn lighthead ***ON*** and then press **Intensity** button (5) until intensity is set to ***High*** mode (C).

NOTE
The factory suggested setting is to adjust the focus at a range of 27 in. (68.6 cm). The light comes fact ory adjusted at this focus range. The allowable adj ustment range is 21 to 39 in. (53.3 to 99.0 cm) to al low for user preference.

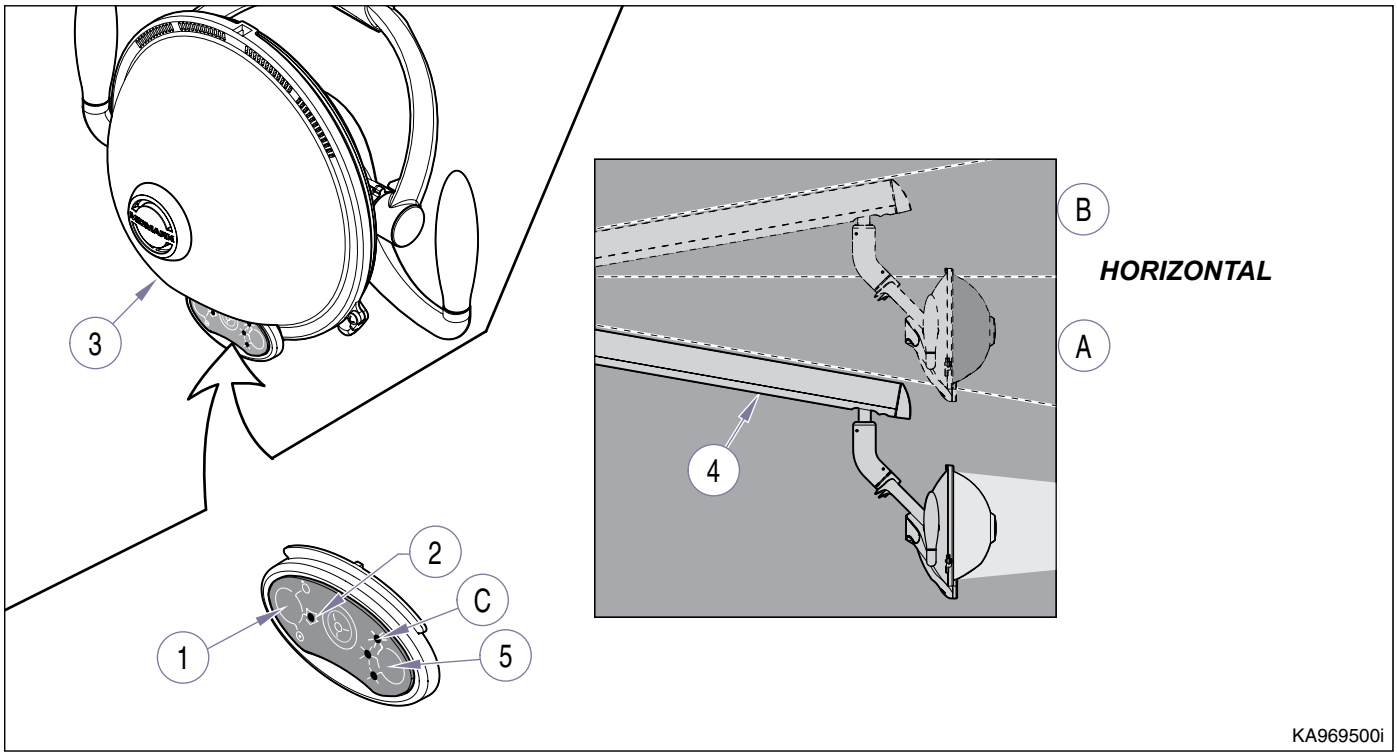


Figure 2-2.

(17) Position shield (1, Figure 2-3) of lighthead at user's desired focus range (2) [21 to 39 in. (53.3 to 90.0 cm)] from a target (3) [wall, chair, or back].

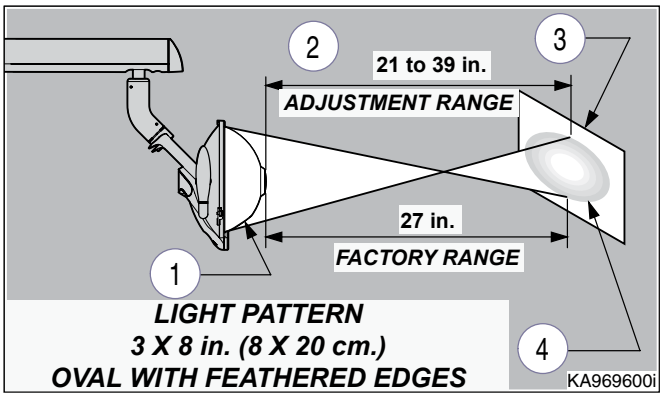


Figure 2-3.

(18) **Observe**. At user's desired focus range (2), light pattern (4) should be a 3 x 8 in. (8 x 20 cm) pattern which is oval in shape with feathered edges.

(19) If light is part of an operatory, turn **Master ON / OFF** switch (1, Figure 2-1) to **OFF**. Then, press **Power** button (3).

(20) Observe. Lighthead (2) should not illuminate. Nothing should happen.

(21) Using lighthead handles, rotate lighthead, flex arm, and light arm thru their full range of mo tions as shown in Figure 1-3, Sheets 1 thru 6). Then, move, release, and observe lighthead at various positions in its range of motion.

(22) **Observe**. The lighthead and arms should be able to be positioned easily through their entire range of motion, without using excessive force. When released, lighthead or arms should not drift down or sideways on their own.

2.2 Troubleshooting Procedures

Table 2-1 is a Troubleshooting Guide which is used to determine causes of malfunctions. Refer to Figures 5-1 thru 5-6 as necessary to assist in troubleshooting electrical circuits.

Use extreme caution when testing components with light that is plugged into universal power supply. Line voltage (115 VAC) is present. Failure to comply could result in personal injury.

SECTION IV
MAINTENANCE / SERVICE INSTRUCTIONS

4.1 Introduction

WARNING
Refer to Operator Manual for complete instructions on operating the dental light. Failure to do so could result in personal injury.

NOTE
Perform an operational test on the dental light after repair is completed to confirm repair was properly made and that all malfunctions were repaired.

The following paragraphs contain removal, installation, repair, and adjustment procedures for the dental light.

4.2 Junction Box Access

A. Removal

(1) ***To access styled junction box***, simply r move junction box cover (1, Figure 4-1) from base (2) by lifting straight up.
To access square junction box, loosen four thumbscrews (A) and lift junction box cover (B) from base (C).

B. Installation

(1) ***On styled junction box,*** simply install junc tion box cover (1) on base (2).
On square junction box, install junction box cover (B) on base (C) and secure by tightening four thumbscrews (A).

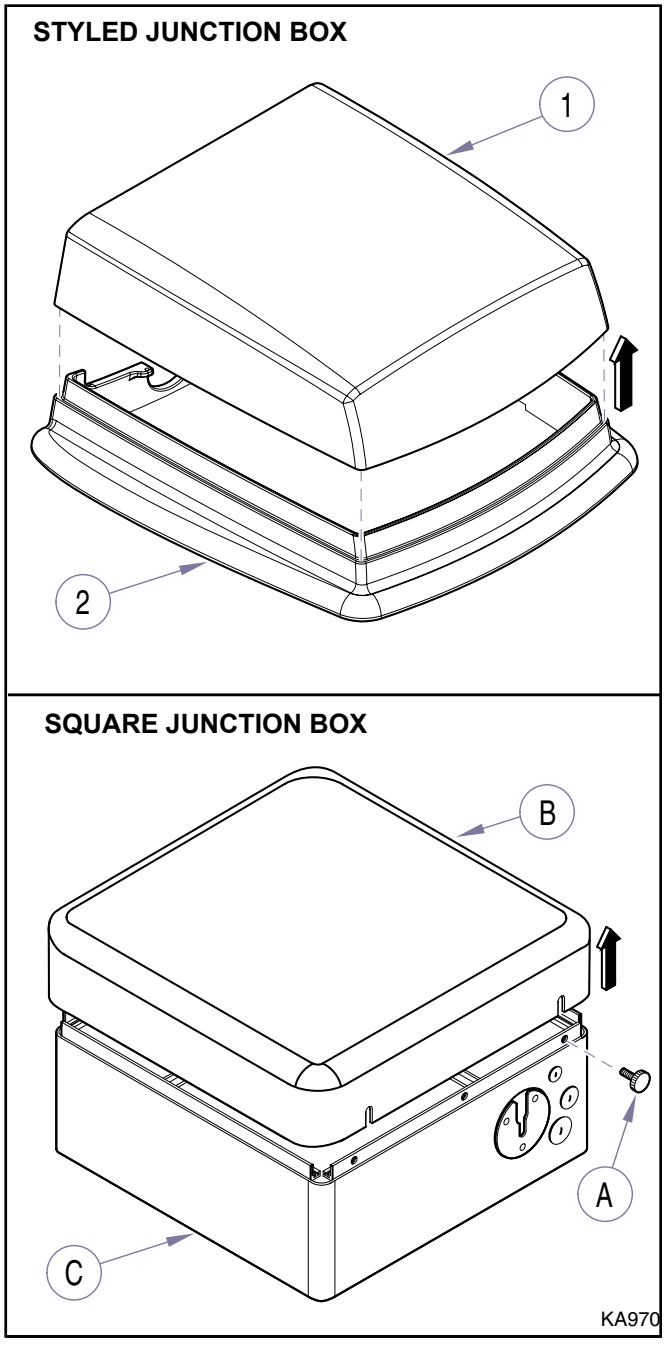


Figure 4-1. Junction Box Access

4.3 Light Bulb Removal / Installation

(A) Removal

CAUTION
The bulb and surrounding components may be HOT! Allow the bulb to cool for at least five minutes before removing the light shield. Never operate the light with light shield removed. Failure to do so may result in burns to the hands. Also, move the light head away from the patient before attempting this procedure. Failure to do so could result in burns to, or contamination of the patient.

(1) Turn lighthead off and allow bulb (1, Figure 4-2) to cool for at least 5 minutes.

(2) Rotate two release levers (2) up 1/4 turn (one located on each side of lighthead) and then remove plastic shield (3) from lighthead (4).

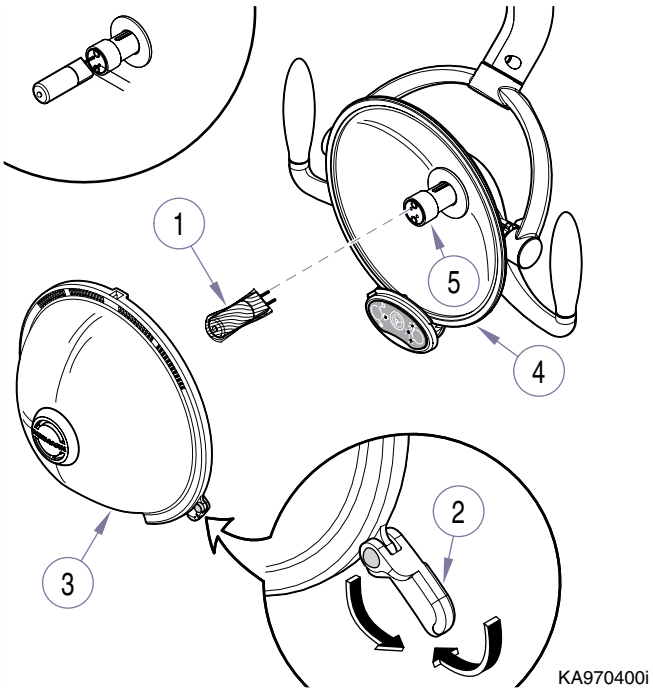


Figure 4-2. Light Bulb Removal / Installation

(3) Remove bulb (1) by pulling bulb straight out of lamp socket (5). Discard used bulb.

B. Installation

EQUIPMENT ALERT
Install new bulb without removing its protective plastic cover. Do not touch bulb with bare hands; these bulbs are sensitive to body oils, which can create hot spots on the bulb glass, reducing the bulb life. If glass portion of bulb is accidentally handled, wipe with a clean, soft, lint-free cloth moistened with denatured alcohol and pat dry.

(1) Using protective plastic cover that bulb is packaged in, align contact pins of new bulb with socket holes and press bulb in firmly. When bulb is firmly seated, there will be approximately a 1/8 in. (3.2 mm) gap between base of bulb and bulb socket.

WARNING
Never operate light with plastic shield removed. The clear shield protects patient and doctor in case of bulb explosion. Failure to have plastic shield installed could result in injury to patient and doctor.

(2) Position plastic shield (3) on lighthead. Secure plastic shield in place by rotating two release levers (2) down 1/4 turn.

4.4 Bulb Socket Removal / Installation

A. Removal

(1) Remove light bulb (Refer to para 4.3).

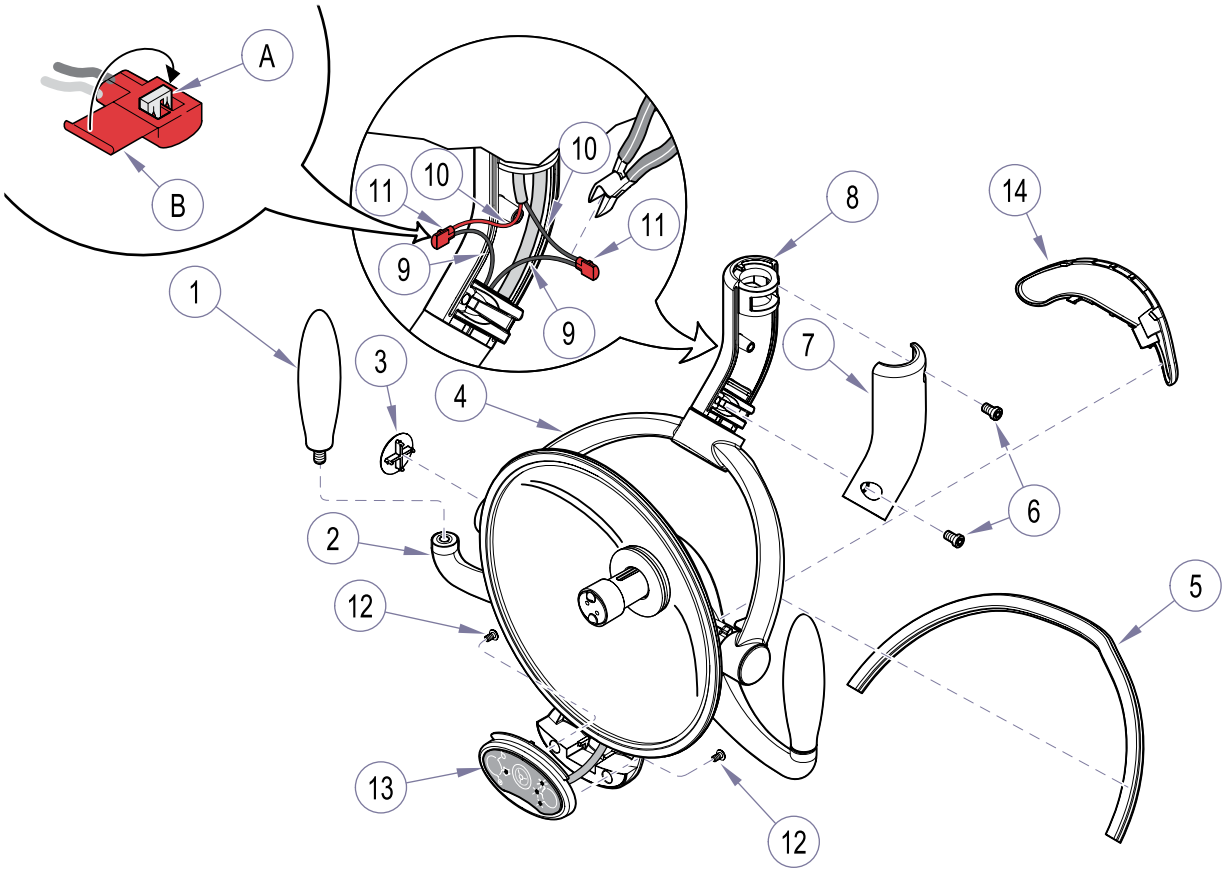
(2) Unscrew handle (1, Figure 4-3) from left side of reflector mount (2).

(3) Using a thin bladed tool, pry yoke cap (3) from light yoke (4).

(4) Remove yoke wire cap (5) from light yoke (4).

(5) Remove two screws (6) and RH elbow half (7) from LH elbow half (8).

(6) Cut wires (9 and 10) as close to wire connectors (11) as possible. Discard used wire connectors (11).



KA970500i

Figure 4-3. Covers Removal / Installation

(7) Remove two screws (12) and touchpad assembly (13) from reflector mount (2). Allow touchpad assembly to hang from wiring.

(8) Using a thin bladed tool, pry focus cap (14) from reflector mount (2).

NOTE
Spanner holes on focus housing nut are spaced approximately 1-3/16 in. (30.2 mm) apart. Snap ring pliers must be large enough to cover this distance

(9) Using a snap ring pliers or similar tool, remove focus housing nut (1, Figure 4-4). See Table 1-2 for special tool.

(10) Pull reflector assembly (2) out front side of reflector mount (3) and then separate by carefully pulling two wires (4) out of reflector mount (3) and light yoke (5).

(11) Remove focus screw (6), socket housing (7), and spring (8) from reflector assembly (2)

(12) Remove two screws (9) and bulb socket (10) from socket housing (7).

B. Installation

Do not overtighten screws or bulb socket may crack. Also, bulb socket must be installed in correct orientation or light will not focus correctly.

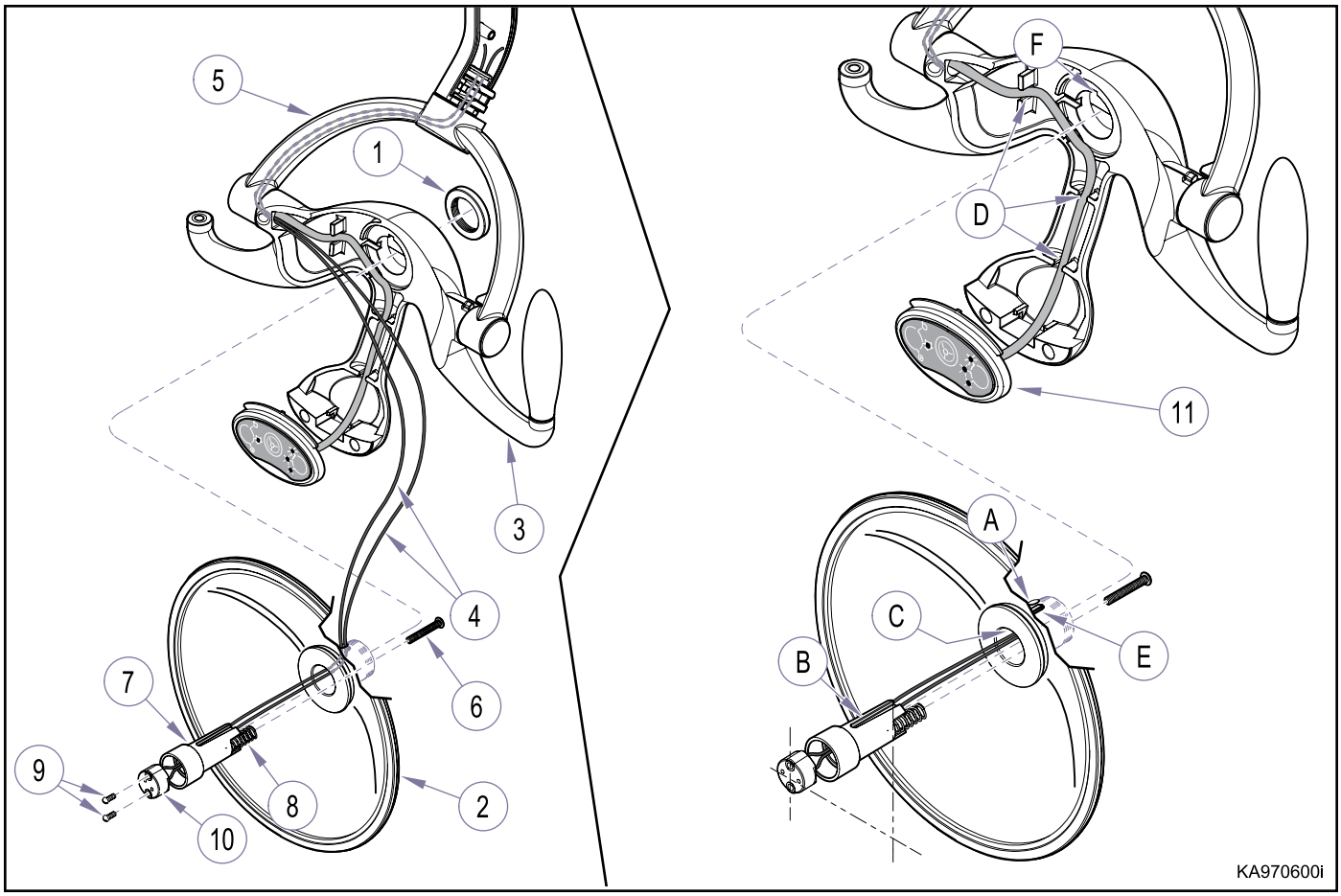


Figure 4-4. Bulb Socket Removal / Installation

(1) While threading two wires (4, Figure 4-4) thru bottom of socket housing (7), install bulb socket (10) in socket housing (7) and secure with two screws (9). Make sure bulb socket is oriented as shown in illustration.

NOTE
In following step, make sure to align slot (B) of socket housing (7) with key (C) of reflector assembly (2).

(2) Insert spring (8) and socket housing (7) into reflector assembly (2), making sure to feed two wires (4) thru wire hole (A) in reflector assembly.

(3) While pressing in on socket housing (7) to overcome spring (8) tension, install focus screw (6). Tighten focus screw fully, then back off two full turns.

NOTE
During following step, make sure to align key (E) of reflector assembly (2) with slot (F) of reflector mount (3).

(4) After feeding two wires (4) thru side of light yoke (5) and then making sure touchpad har ness (11) is correctly positioned in four strain reliefs (D), install reflector assembly (2) on reflector mount (3) and secure with focus housing nut (1). Use snap ring pliers to tighten focus housing nut.

(5) Feed two wires (9, Figure 4-3) thru light yoke (4) so they can be connected to two wires (10).

NOTE
Cut any excess length from two bulb socket (10) wires. Enough length should remain so that light head can pivot freely once wire connections are made.

To use wire connector, fully insert two un stripped wires into connector. Using pliers, squeeze wire spade (A) down onto two wires. Then, snap lid (B) shut to cover connections.

(6) Connect one wire (9) to one wire (10) using new wire connector (11). Repeat for remain ing set of wires (9 and 10).

(7) Install RH elbow half (7) on LH elbow half (8) and secure with two screws (6). Adjust two screws while rotating lighthead around pivot joints. Lighthead should rotate thru pivot joints easily without taking excessive force. When released, joints should not drift on their own. Adjust per user's preference

(8) Install yoke wire cap (5) on light yoke (4).

(9) Install yoke cap (3) on light yoke (4).

(10) Install touchpad assembly (13) on reflector mount (2) and secure with two screws (12).

(11) Screw handle (1) onto left side of reflector mount (2).

(12) Install light bulb (Refer to para 4.3).

(13) Adjust focus pattern (Refer to para 4.5).

(14) Install focus cap (14) on reflector mount (2).

4.5 Light Beam Focus Adjustment

A. Adjustment

NOTE
This adjustment affects the sharpness of the light pattern at a specified distance. The light's focus is factory preset for a distance of 27 in. (68.6 cm) from the front surface of the plastic shield to patient (tar get). However, the focus can be adjusted per user's preference for any distance between 21 to 39 in. (53.3 to 99.0 cm).

(1) Position plastic shield (1, Figure 4-5) of lighthead at any distance between 21 to 39 in. (53.3 to 99.0 cm) from a target (2) (wall, chair, or back section) and turn on light.

(2) Using a screwdriver, pry focus cap (3) off back of lighthead.

(3) Using a 1/8 in. Allen Wrench (provided), adjust focus screw (4) as necessary to achieve desired pattern. The suggested pattern is a 3 x 8 in. (8 x 20 cm) pattern, oval in shape, with feathered edges.

(4) Install focus cap (3) on back of lighthead.

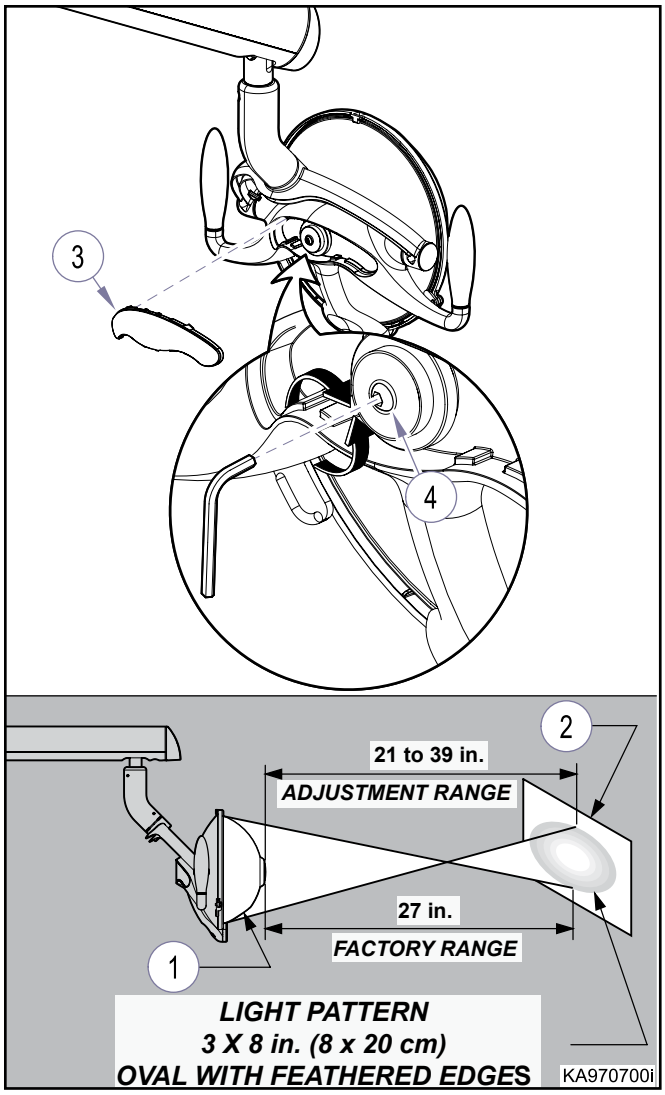


Figure 4-5 Light Beam Focus Adjustment

4.6 Light Control Pendant Removal / Installation

A. Removal

(1) Rotate two release levers (1, Figure 4-6) up 1/4 turn and then remove plastic shield (2) from reflector assembly (3).

(2) Remove two screws (4) and separate touch pad assembly (5) from lighthead.

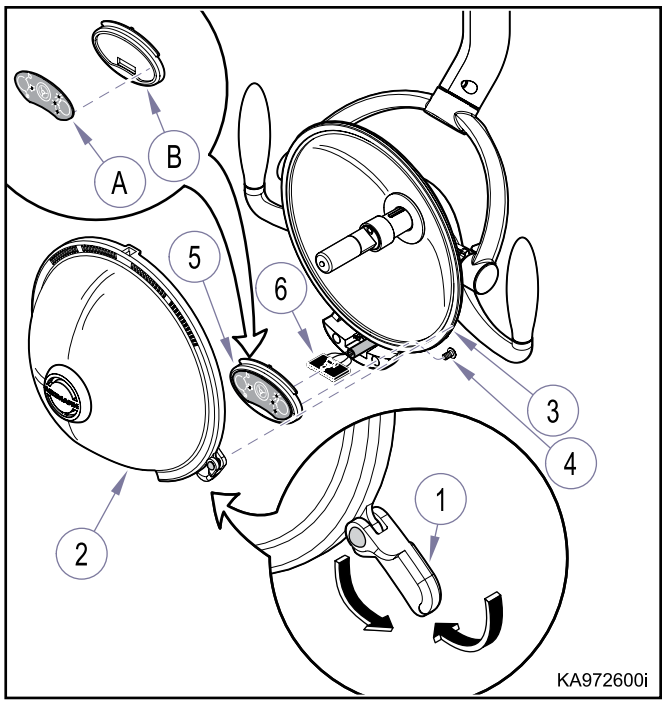


Figure 4-6 Light Contro; Pendant Removal / Installation

(3) Disconnect wire harness (6) from touchpad assembly (5). Discard used touchpad assembly.

B. Installation

(1) Remove protective backing from membrane switch panel (A) and then install on control bezel (B). Press down firmly on membrane switch panel to ensure good adhesion between parts.

NOTE
When connecting wire harness, center wire harness on pins of touchpad assembly; make sure there is one unused terminal on each end of wire harnes

(2) Connect wire harness (6) to touchpad assembly (5).

(3) Install touchpad assembly (5) on lighthead and secure with two screws (4).

(4) Install plastic shield (2) on reflector assembly (3) and secure by rotating two release levers (1) down 1/4 turn.

4.7 Console & LR Light Transformer Removal / Installation (Applies to chair mounted units powered with a J-Box)

A. Removal

(1) Remove junction box cover (Refer to para 4.2).

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(2) Unplug power cord of universal power supply from outlet receptacle.

(3) Remove two screws (1, Figure 4-7) and power supply cover (2) from chassis (3).

NOTE
On some units, not all three wire harnesses will be connected, depending on which options were pur chased.

(4) Tag and disconnect wire harnesses (4) from connectors (5).

(5) While pressing in on two locking tabs (A), push connector (5) out of chassis (3). Re peat for two remaining connectors (5)

(6) Disconnect one wire (6) from center (N.O.) terminal of pressure switch (7).

(7) Disconnect wire harness (8) and wire (9) from terminals of circuit breaker (10).

(8) Disconnect wire harness (11) from terminal of fuse housing (12).

(9) Remove four locknuts (13) and transformer assembly (14) from chassis (3).

B. Installation

(1) Install transformer assembly (14) on chassis (3) and secure with four locknuts (13).

(2) Connect wire harness (11) to terminal of fuse housing (12). If necessary, refer to Figure 5-2 for wiring diagram

(3) Connect wire harness (8) to top terminal and wire (9) to lower terminal of circuit breaker (10).

(4) Connect one wire (6) to center (N.O.) termi nal of pressure switch (7).

(5) Install three connectors (5) in chassis (3) by pushing connectors into chassis until they "snap" into place.

NOTE
On some units, not all three wire harnesses will be connected, depending on which options were pur chased.

(6) Connect wire harnesses (4) to connectors (5).

(7) Install power supply cover (2) on chassis (3) and secure with two screws (1).

(8) Plug power cord of universal power supply into outlet receptacle.

(9) Install junction box cover (Refer to para 4.2).

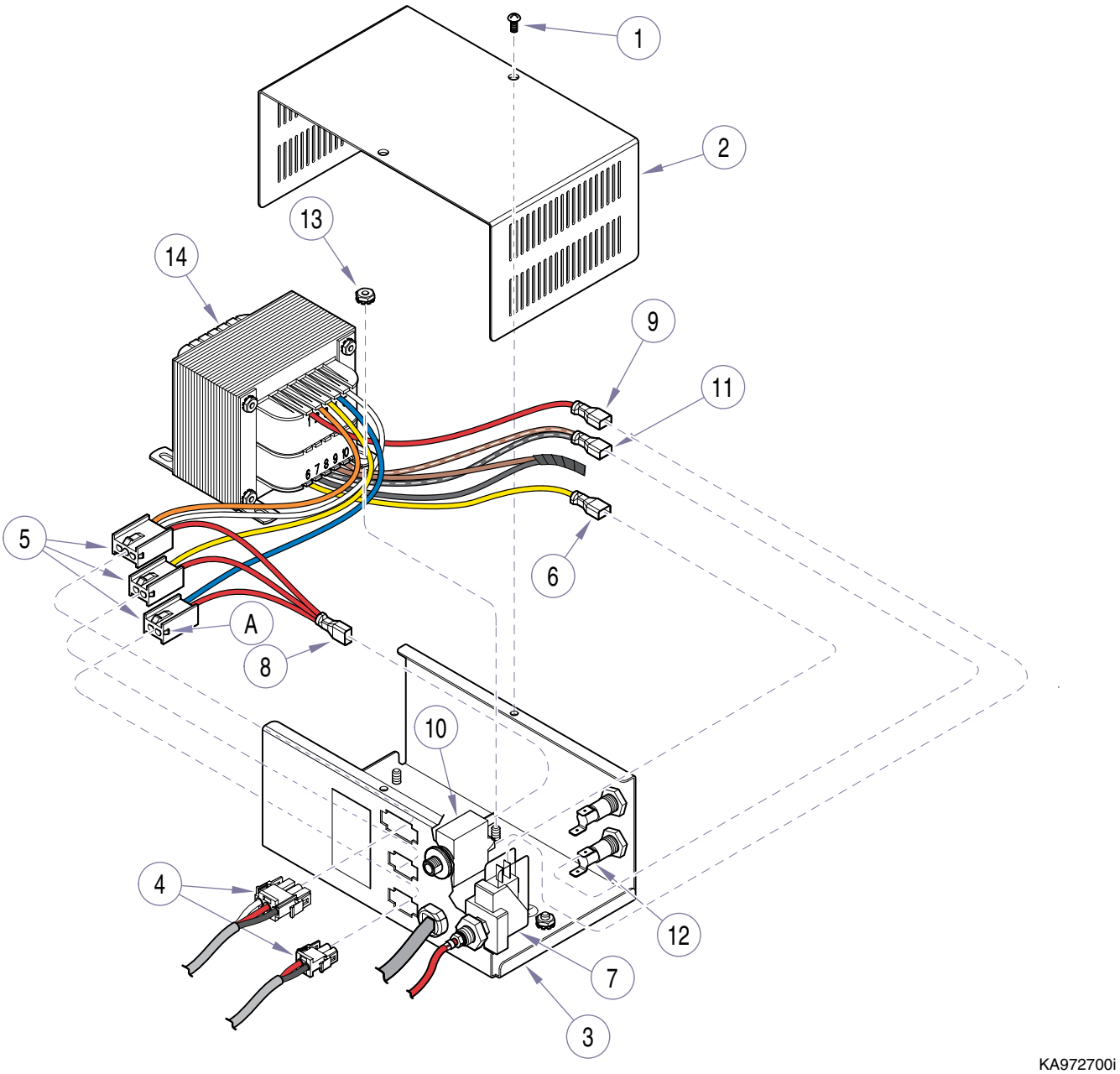


Figure 4-7 Console & LR Light Transformer Removal / Installation

4.8 Ceiling Light Transformer Removal / Installation

A, Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is n no power to light unit.

(2) Loosen two setscrews (1, Figure 4-8) and lower ceiling cover (2) down out of way.

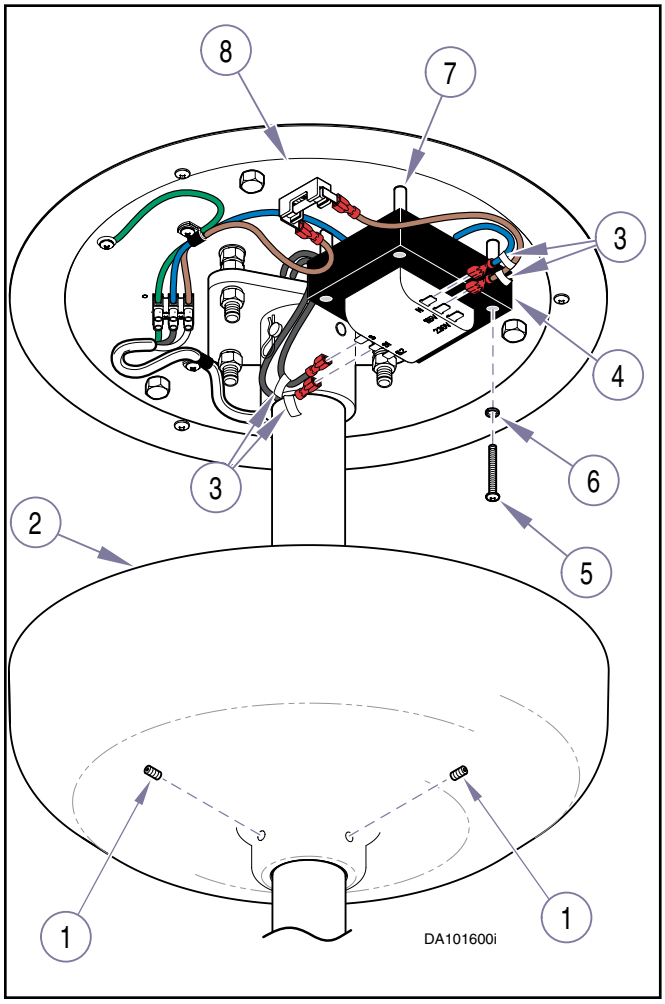


Figure 4-8 Ceiling Light Transformer Removal / Installation

(3) Tag and disconnect four wires (3) from termi nals of transformer (4).

(4) Remove four screws (5), lockwashers (6), transformer (4) and rolled spacers (7) from ceiling plate (8).

B. Installation

(1) Install transformer (4) on ceiling plate (8) and secure with four rolled spacers (7), lockwash ers (6), and screws (5).

(2) Connect four wires (3) to terminals of trans former (4). If necessary, refer to Figure 5-4 for wiring diagram.

(3) Position ceiling cover (2) up against ceiling and then secure in position with two set screws (1).

(4) Turn ON facility power breaker so there is power to light unit.

4.9 Ceiling Light Fuse Removal / Instal lation

A. Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Loosen two setscrews (1, Figure 4-9) and lower ceiling cover (2) down out of way.

(3) Pull fuse (3) out of fuse holder (4).

(4) Inspect fuse (3) for any indication it has been blown. Perform continuity check on fuse. If bad, discard fuse.

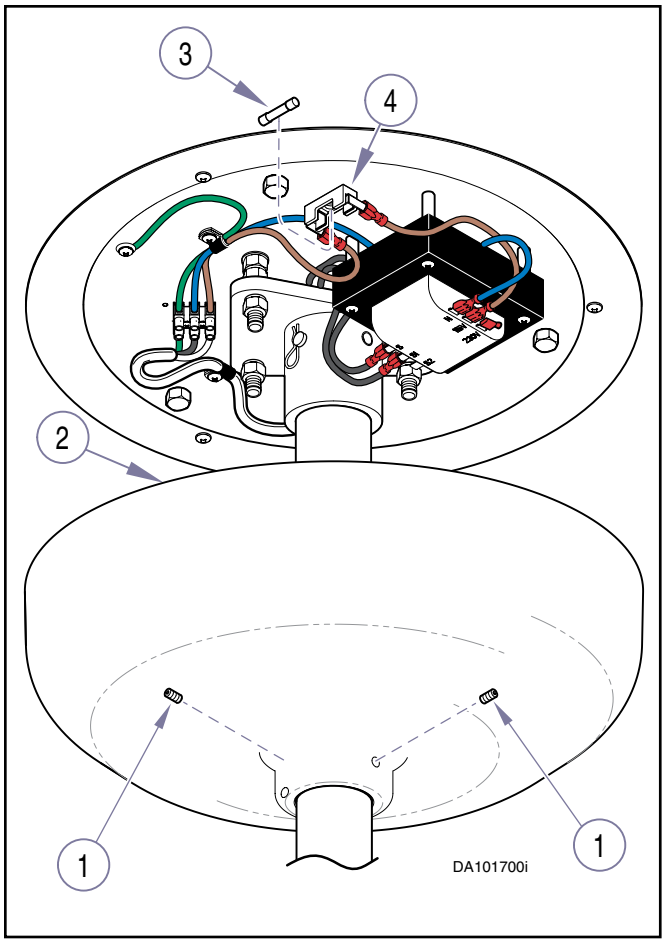


Figure 4-9 Ceiling Light Fuse Replacement

B. Installation

EQUIPMENT ALERT
Check Table 1-1. Specifications to ensure correct replacement fuse is used or refer to parts list in Section VI of this manual.

(1) Insert new fuse (3) in fuse holder (4).

(2) Position ceiling cover (2) up against ceiling and then secure in position with two set screws (1).

(3) Turn ON facility power breaker so there is power to light unit.

4.10 Track Light Transformer Removal / Installation

Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Remove four screws (1, Figure 4-10) and transformer cover (2) from standoffs (3).

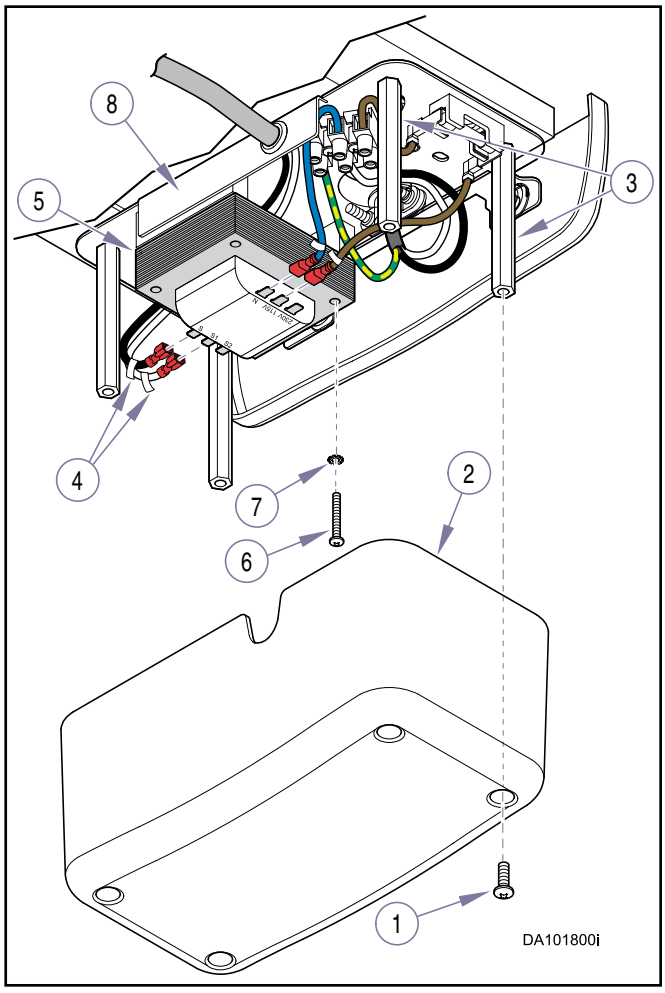


Figure 4-10 Light Track Transformer Removal / Installation

(3) Tag and disconnect four wires (4) from terminals of transformer (5).

(4) Remove four screws (6), lockwashers (7), and transformer (5) from base plate assembly (8).

B. Installation

(1) Install transformer (5) on base plate assembly (8) and secure with four lockwashers (7) and screws (6).

(2) Connect four wires (4) to terminals of transformer (5). If necessary, refer to Figure 5-5 for wiring diagram.

(3) Install transformer cover (2) on four standoffs (3) with four screws (1).

(4) Turn ON facility power breaker so there is power to light unit.

4.11 Track Light Fuse Removal / Installation

Removal

WARNING

Always disconnect electrical power from the unit before removing any of the unit's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Remove four screws (1, Figure 4-11) and transformer cover (2) from standoffs (3).

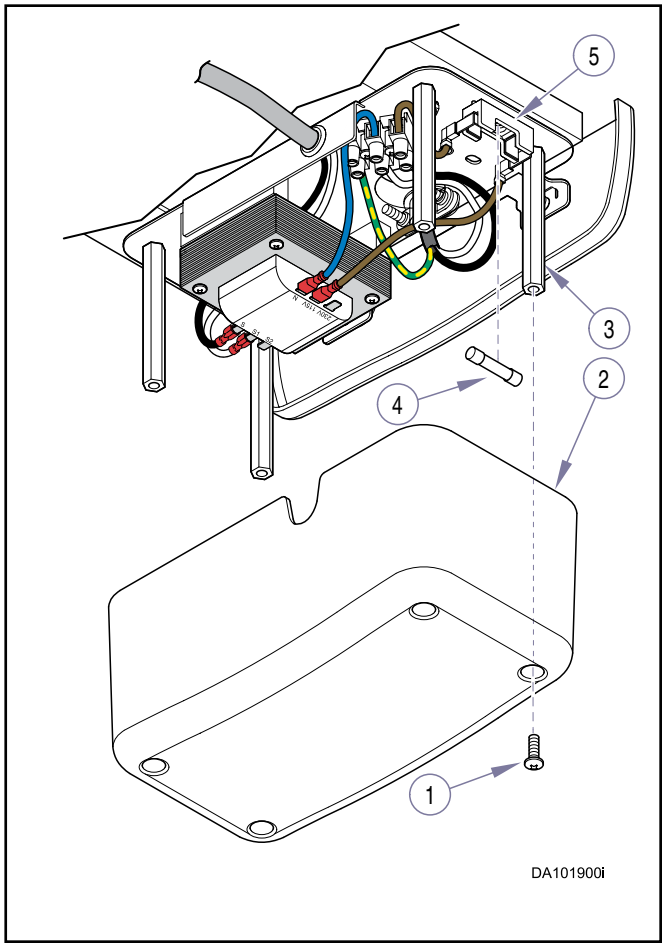


Figure 4-11 Track Light Fuse Removal / Installation

(3) Pull fuse (4) out of fuse holder (5).

(4) Inspect fuse (4) for any indication it has been blown. Perform continuity check on fuse. If bad, discard fuse.

B. Installation

EQUIPMENT ALERT
Check Table 1-1. Specifications to ensure correct replacement fuse is used or refer to parts list in Section VI of this manual.

(1) Insert new fuse (4) in fuse holder (5).

(2) Install transformer cover (2) on standoffs (3) and secure with four screws (1).

(3) Turn ON facility power breaker so there is power to light unit.

4.12 Wall / Cabinet Light Transformer Removal / Installation

A. Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the possi bility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) If wall unit only, remove four screws (1, Figure 4-12) and transformer cover (2) from mount assembly (3).

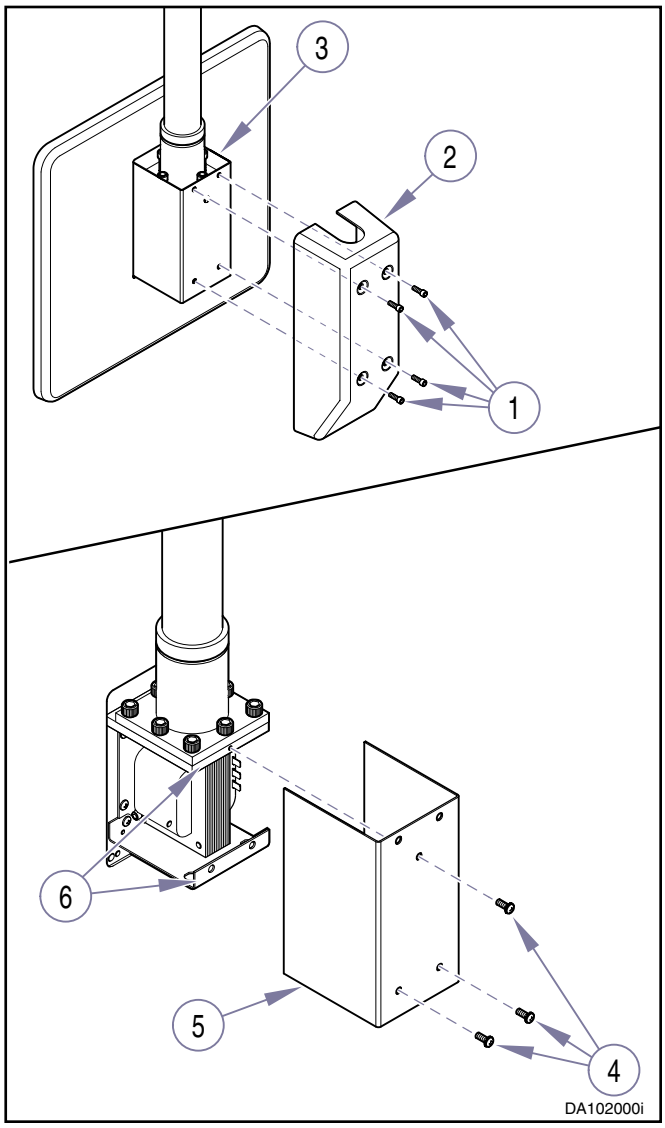


Figure 4-12 Wall / Cabinet Transformer Removal / Installation

(3) Remove three screws (4) and cover assem bly (5) from wall mount bracket (6).

(4) Remove four screws (1, Figure 4-13), lock washers (2), and separate transformer as sembly (3) from wall mount bracket (4).

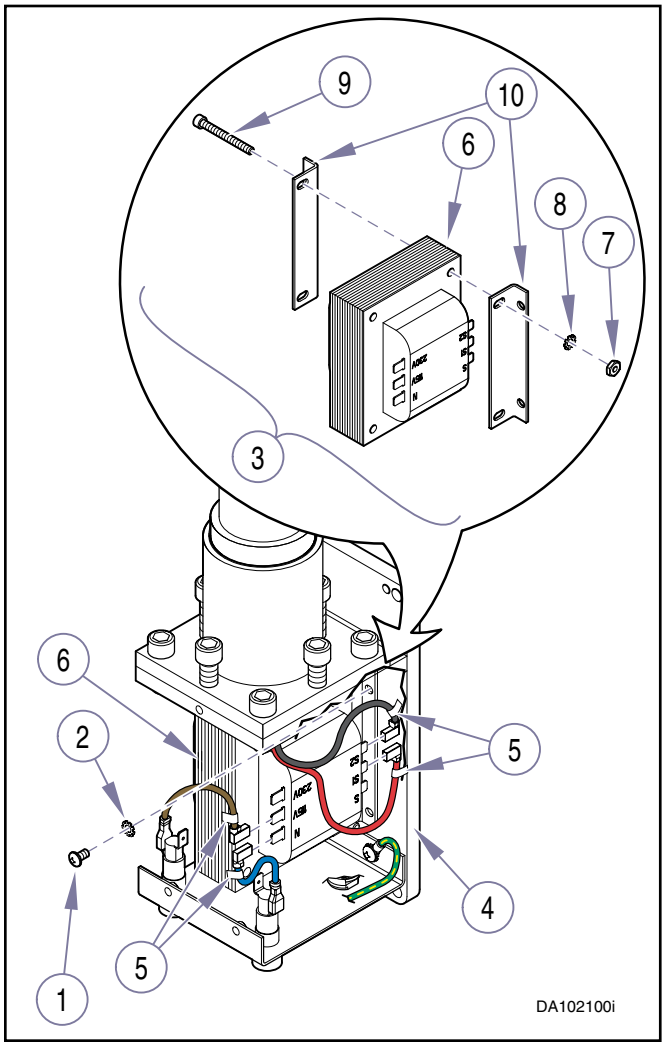


Figure 4-13 Transformer Removal / Installation

(5) Tag and disconnect four wires (5) from termi nals of transformer (6).

(6) Remove two nuts (7), lockwashers (8), screws (9) and transformer brackets (10) from transformer (6).

B. Installation

(1) Install transformer brackets (10, Figure 4-13) on transformer (6) and secure with two screws (9), lock-washers (8), and nuts (7).

(2) Connect four wires (5) to terminals of trans former (6). If necessary, refer to Figure 5-6 for wiring diagram.

(3) Position transformer assembly (3) on wall mount bracket (4) and secure with four lock washers (2) and screws (1).

(4) Install cover assembly (5, Figure 4-12) on wall mount bracket (6) and secure with three screws (4).

(5) If wall unit only, install transformer cover (2) on mount assembly (3) and secure with four screws (1).

(6) Turn ON facility power breaker so there is power to light unit.

4.13 Wall / Cabinet Light Fuse Removal / Installation

A. Removal

(1) If wall unit only, remove four screws (1, Fig ure 4-14) and transformer cover (2) from mount assembly (3).

(2) Simultaneously push in on fuse cap (4) with a small slotted screwdriver and rotate it 1/4 turn in the counterclockwise direction; then pull fuse cap from fuse holder (5).

(3) Pull fuse (6) out of fuse cap (4).

(4) Inspect fuse (6) for any indication it has been blown. Perform continuity check on fuse. If bad, discard fuse.

B. Installation

EQUIPMENT ALERT
Check Table 1-1. Specifications to ensure correct replacement fuse is used or refer to parts list in Section VI of this manual.

(1) Insert new fuse (6) in fuse cap (4).

(2) Simultaneously push fuse cap (4) into fuse holder (5) and rotate it 1/4 turn in clockwise direction to secure it.

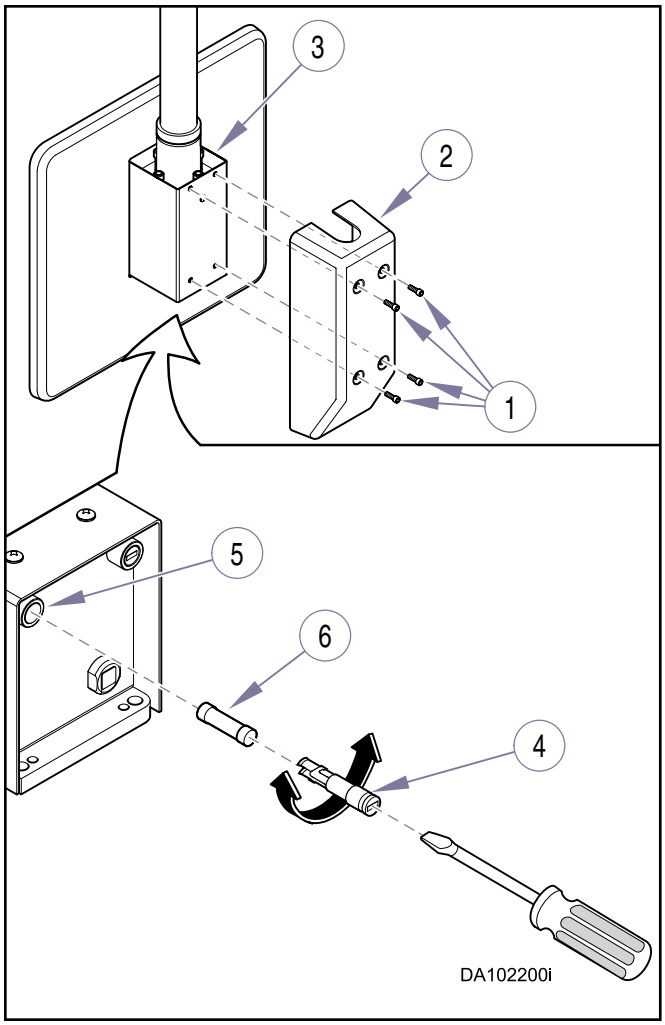


Figure 4-14 Wall Cabinet Light Fuse Removal / Installation

(3) Install transformer cover (2) on mount assembly (3) and secure with four screws (1).

4.14 Universal Light Transformer Removal / Installation

A. Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Remove four screws (1, Figure 4-15) and top transformer cover (2) from standoffs (3).

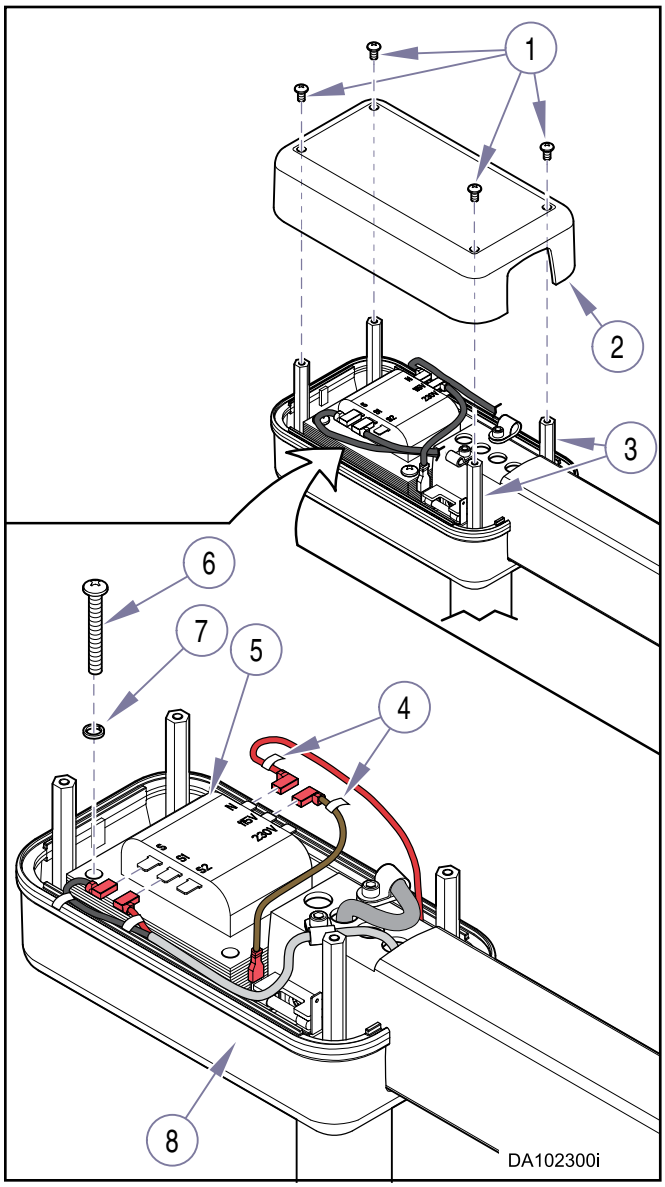


Figure 4-15 Universal Light Transformer Removal / Installation

(3) Tag and disconnect four wires (4) from terminals of transformer (5).

(4) Remove four screws (6), lockwashers (7), and transformer (5) from chassis assembly (8).

B. Installation

(1) Install transformer (5) on chassis assembly (8) and secure with four lockwashers (7) and screws (6).

(2) Connect four wires (4) to terminals of trans former (5). If necessary, refer to Figure 5-3 for wiring diagram.

(3) Install transformer cover (2) on four standoffs (3) with four screws (1).

(4) Turn ON facility power breaker so there is power to light unit.

4.15 Universal Light Fuse Removal / Installation

A. Removal

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Remove four screws (1, Figure 4-16) and top transformer cover (2) from standoffs (3).

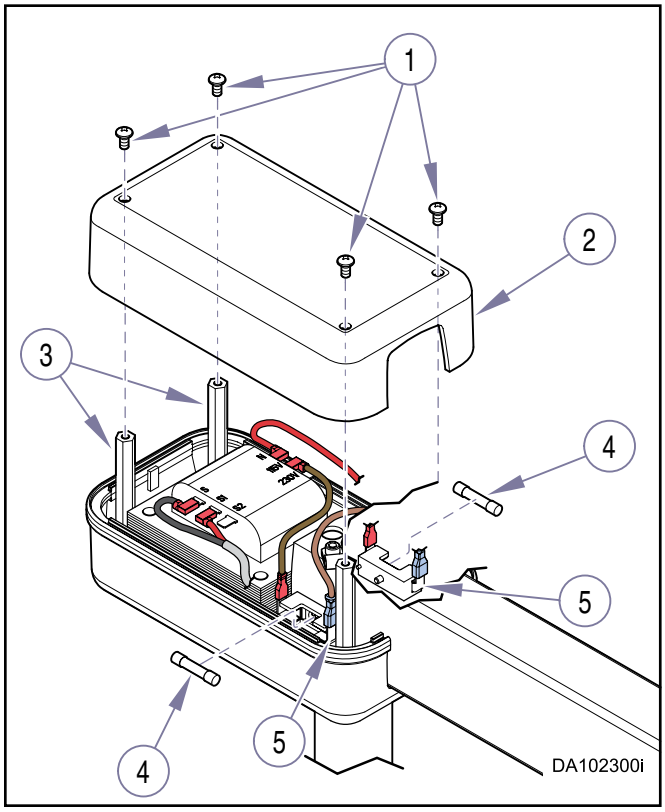


Figure 4-16 Track Light Fuse Removal / Installation

(3) Pull each fuse (4) out of each fuse holder (5).

(4) Inspect fuse (4) for any indication it has been blown. Perform continuity check on fuse. If bad, discard fuse.

B. Installation

Equipment Alert
Check Table 1-1. Specifications to ensure correct replacement fuse is used or refer to parts list in Section VI of this manual.

(1) Insert new fuse (4) in fuse holder (5).

(2) Install top transformer cover (2) on standoffs (3) and secure with four screws (1).

(3) Turn ON facility power breaker so there is power to light unit.

4.16 Pressure Switch Removal / Installa tion (Applies to chair mounted units powered with a J-Box)

A. Removal

(1) Remove junction box cover (Refer to para 4.2

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/shrouds or making any repairs to pre vent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(2) Unplug power cord of universal power supply from outlet receptacle.

(3) Remove two screws (1, Figure 4-17) and power supply cover (2) from chassis (3).

(4) Tag and disconnect two wires (4) from terminals of pressure switch (5).

(5) Remove uni-clamp (6) and then cut tube (7) as close as possible to fitting of pressure switch (5).

(6) Remove nut (8), washer (9), and pressure switch (5) from chassis (3). Do not discard nut and washer; they will be needed for installation.

(7) Remove gasket (10) and fitting (11) from pres sure switch (5).

B. Installation

(1) Install gasket (10) and fitting (11) on pressure switch (5).

(2) Install pressure switch (5) on chassis (3) and secure with washer (9) and nut (8).

(3) Slide new uni-clamp (6) onto end of tube (7); then connect tube (7) to fitting (11) and secure in place with uni-clamp.

(4) Connect two wires (4) to terminals of pressure switch (5).

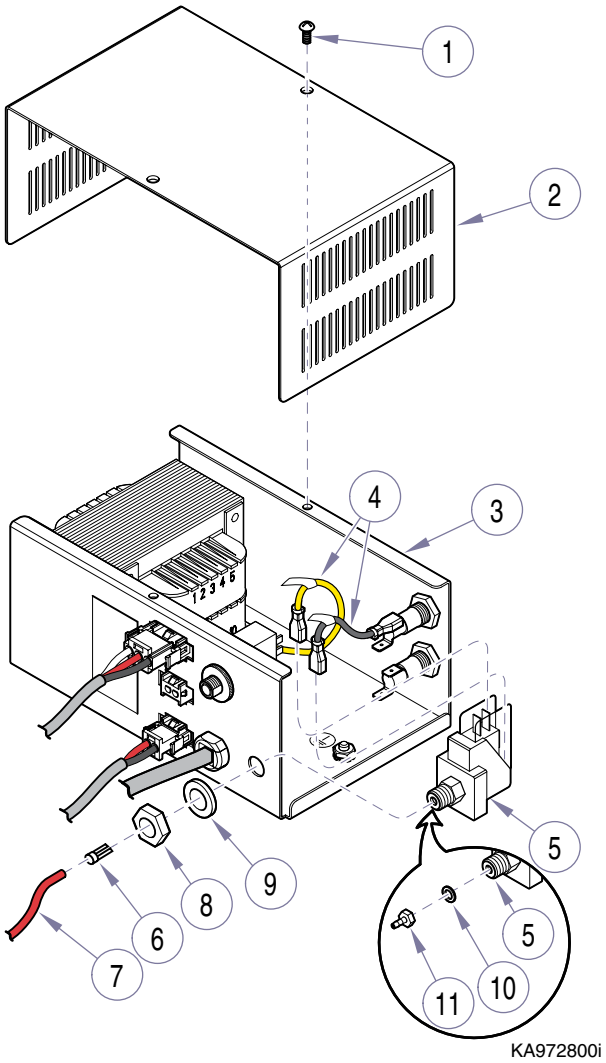


Figure 4-17 Pressure Switch Removal / Installation

(5) Install power supply cover (2) on chassis (3) and secure with two screws (1).

(6) Plug power cord of universal power supply into outlet receptacle.

(7) Install junction box cover (Refer to para 4.2).

4.17 Circuit Breaker Removal / Installation (Applies to chair mounted units powered with a J-Box)

A. Removal

(1) Remove junction box cover (Refer to para 4.2).

Warning
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(2) Unplug power cord of universal power supply from outlet receptacle.

(3) Remove two screws (1, Figure 4-18) and power supply cover (2) from chassis (3).

(4) Tag and disconnect wires (4) from terminals of circuit breaker (5).

(5) Remove plastic nut (6) and circuit breaker (5) from chassis (3).

B. Installation

(1) Install circuit breaker (5) on chassis (3) and secure with plastic nut (6).

(2) Connect two wires (4) to terminals of circuit breaker (5).

(3) Install power supply cover (2) on chassis (3) and secure with two screws (1).

(4) Plug power cord of universal power supply into outlet receptacle.

(5) Install junction box cover (Refer to para 4.2).

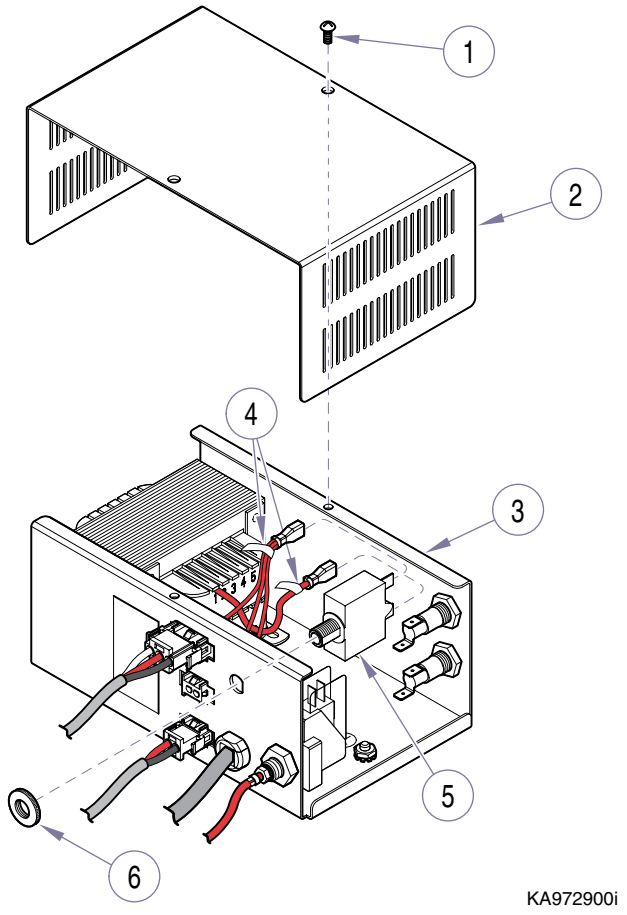


Figure 4-18 PCircuit Breaker Removal / Installation

4.18 Fuse Holder Assembly Removal / Installation (Applies to chair mount ed units powered with a J-Box)

A. Removal

(1) Remove junction box cover (Refer to para 4.2

> **Warning**
> Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(2) Unplug power cord of universal power supply from outlet receptacle.

(3) Remove two screws (1, Figure 4-19) and power supply cover (2) from chassis (3).

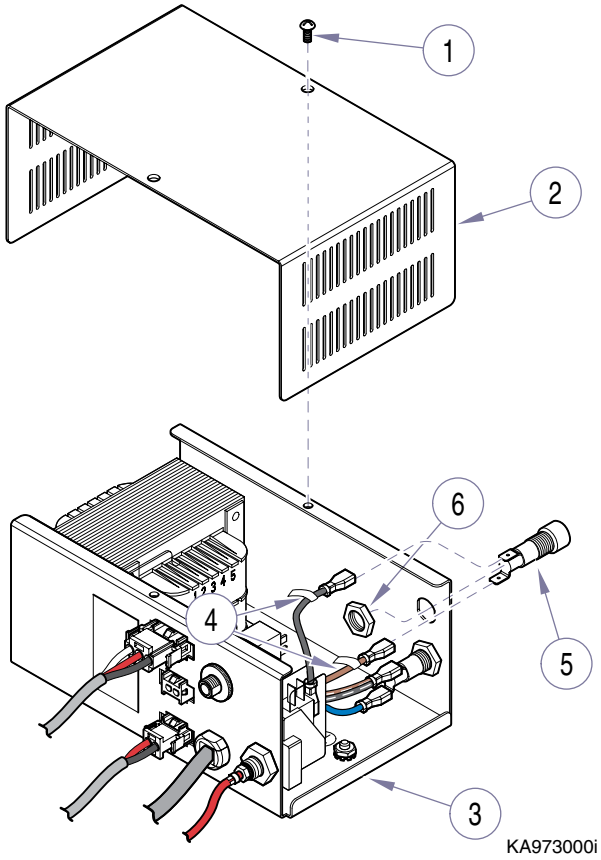


Figure 4-17 Pressure Switch Removal / Installation

(4) Tag and disconnect wires (4) from terminals of fuse holder assembly (5).

(5) Remove plastic nut (6) and fuse holder assem bly (5) from chassis (3).

(6) If necessary, repeat steps for remaining fuse holder assembly.

B. Installation

(1) Install fuse holder assembly (5) on chassis (3) and secure with plastic nut (6).

(2) Connect two wires (4) to terminals of fuse holder assembly (5).

(3) Install power supply cover (2) on chassis (3) and secure with two screws (1).

(4) Plug power cord of universal power supply into outlet receptacle.

(5) Install junction box cover (Refer to para 4.2).

4.19 Light Control Board Removal / In stallation

A. Removal

(1) Turn **OFF** power to unit.

NOTE
On some units, end cap removal differs slightly. Also, on some units, both end caps may need removed.

(2) Remove arm endcap from light arm channel.

(3) Slide light arm cover backward approximately 12 in. (30.5 cm) to gain access to light control board.

(4) Tag the two 20 VAC Supply (Fig. 4-20) and two Light wires; then loosen four terminal screws and disconnect the wires from terminal.

(5) Cut the cable tie securing the seven wire har ness to the light control board.

(6) On earlier units, tag the seven wires; then un lock the locking levers, by rotating them upward, and disconnect wires from terminal. On later units, unplug the connector from the terminal on the PC board.

(7) Remove the four screws and light control board from light arm channel.

B. Installation (Figure 4-20)

CAUTION
When connecting wires to the terminals on the PC board, use care to ensure that all strands of wire are captured inside its terminal slot before securing. ***Loose strands of wire could cause a short to the light control board causing damage or operational problems***

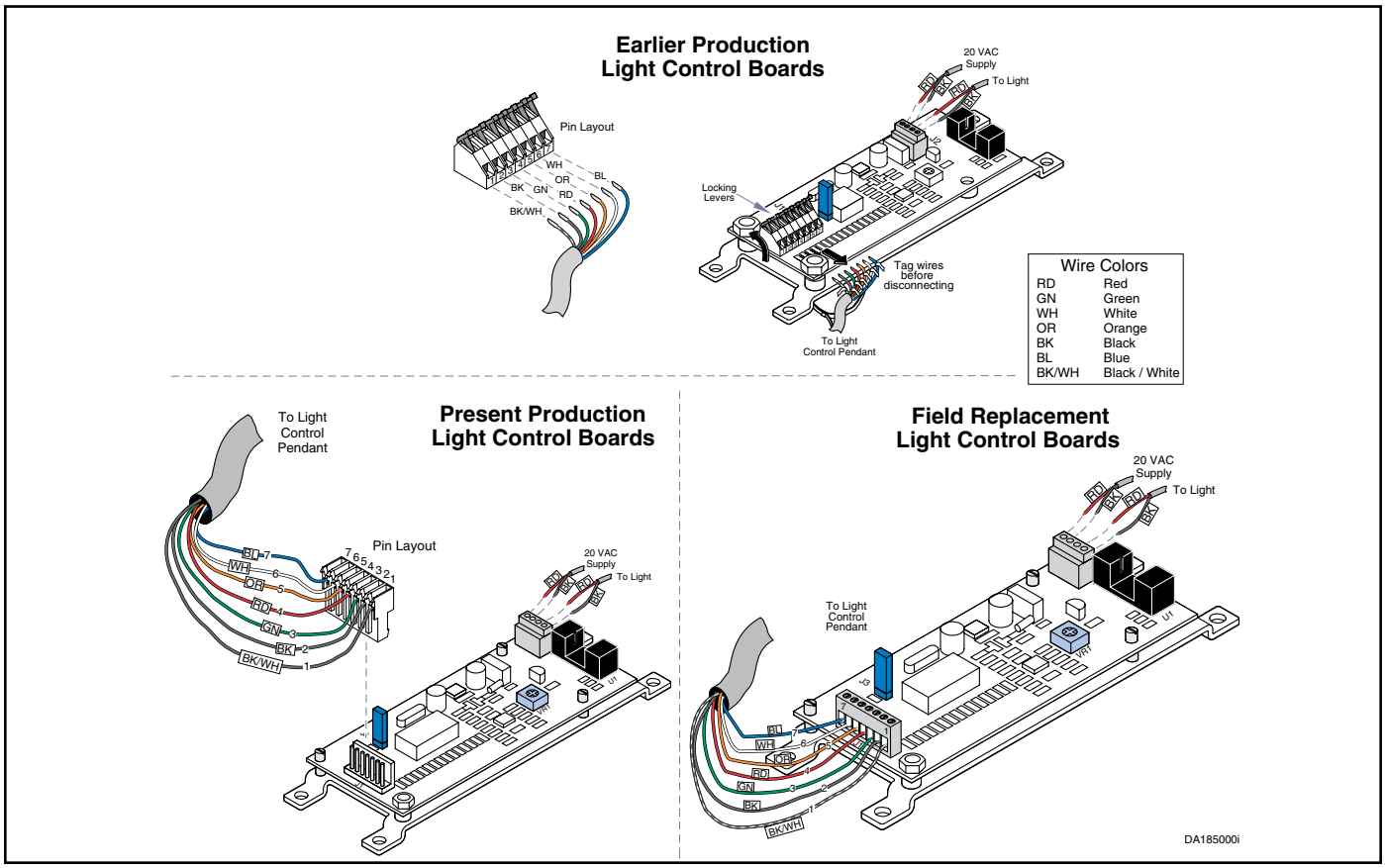


Figure 4-20 light Control Board Removal / Installation

(1) Insert the seven wires in the appropriate slot of the terminal and secure in place by rotating the locking levers downward into locked position or tightening the screws.

(2) Install the light control board on the light arm channel and secure with four screws.

(3) Secure the seven wire harness to the corner of the light control board with a cable tie.

(4) Connect the two 20 VAC Supply and two Light wires to the appropriate slots of the terminal and secure in place by tightening the terminal screws.

(5) Slide the light arm cover back onto the light arm channel.

(6) Install the arm endcap on the light arm channel and secure with the screw.

4.20 AUTO ON Mode Set Point Adjustment

A. Adjustment

NOTE
This adjustment allows the user to set desired height (when light arm is being lowered) of light arm at which ***AUTO ON*** mode is activated (light automati cally turns on).

On some units, end cap removal differs slightly. Also, on some units, both end caps may need removed.

(1) Remove screw (1, Figure 4-21) and arm endcap (2) from light arm (3).

(2) Slide light arm cover (4) backward approximate ly 14 in. (35.5 cm) to gain access to light control board (5)

(3) Press **POWER** button until light is in ***AUTO ON*** mode.

NOTE
Consult the user of the light to determine the pre ferred ***AUTO ON*** height.

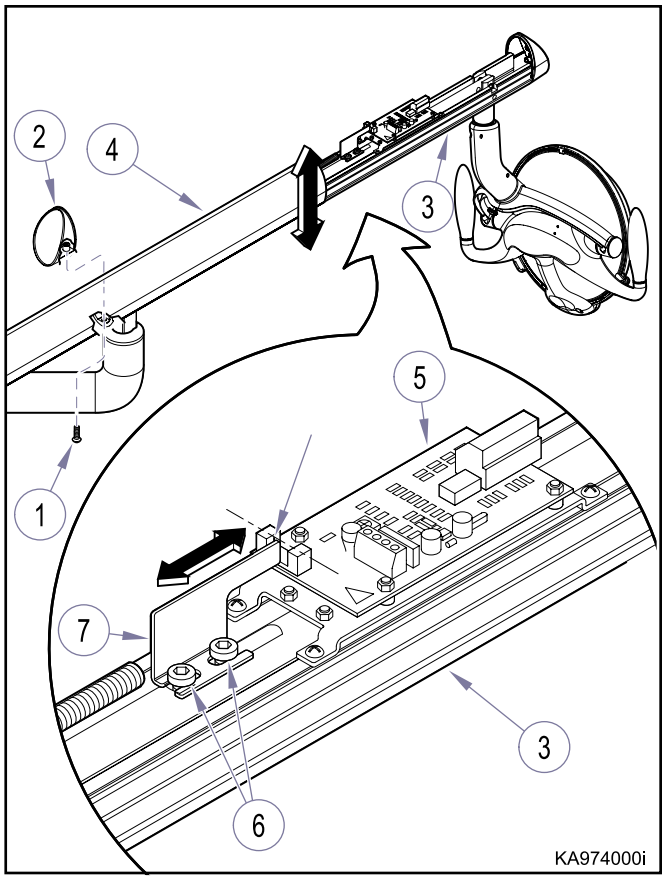


Figure 4-21 AUTO ON Mode Set Point Adjustment

(4) Position light arm (3) at desired height for ***AUTO ON*** mode to activate; hold light arm in this posi tion during next step.

(5) Loosen two screws (6) and slide trigger (7) all the way out; then slowly slide trigger in until lighthead turns on (at set point line). Secure trigger in this position by tightening two screws (6).

(6) Raise and lower light arm (3) to verify set point of AUTO ON mode is set as desired. Repeat steps 4 and 5 as necessary.

(7) Slide light arm cover (4) back onto light arm (3) fully.

(8) Install arm endcap (2) on light arm (3) and se cure with screw (1).

4-21 Testing Light Control PCB

A. Testing

(1) Turn OFF power to the unit

NOTE
On some units, end cap removal differs slightly. Also, on some units, both end caps may need removed

(2) Remove screw (Fig. 4-20) and arm end cap from light arm channel.

(3) Slide light arm cover backward approximately 12 in. to gain access to light control board.

NOTE
Do ***NOT*** remove the Power Supply and Power to the Light leads (Fig. 22) from the board as it will be ne essary to power up the board to test it.

(4) Remove J1 Plug Connector. On earlier units, tag the 7 wires (Fig. 4-22), than disconnect them by rotating the lock lever upward.

WARNING
Use care when testing circuits with the supply power on to prevent injury from electrical shock.

(5) Turn on the power to the unit.

NOTE
The power at the Light Control PC Board should be 18.5 VAC at the J2 plug connector, pins 3 & 4.

(6) Check the supply power at the light control PC board at connector J2, pins 3 & 4 (Fig. 4-22). There should be 18.5 VAC.

NOTE
When testing the light with the jumper wire, only mo mentarily (briefly) touch the pins to energize the spe cific mode of operation (Fig. 4-22).
The light must be on before checking Composite and Light Intensity

(7) Turn **ON** the light by briefly jumpering pins **2 & 6.** (Fig. 4-22).

(8) Jumper pins **2 & 5** to check the Composite mode.

(9) Jumper pins 2 & 7 to check **Light Intensity** sett ings.
Touch, release, and retouch the pins to go from one setting to another.

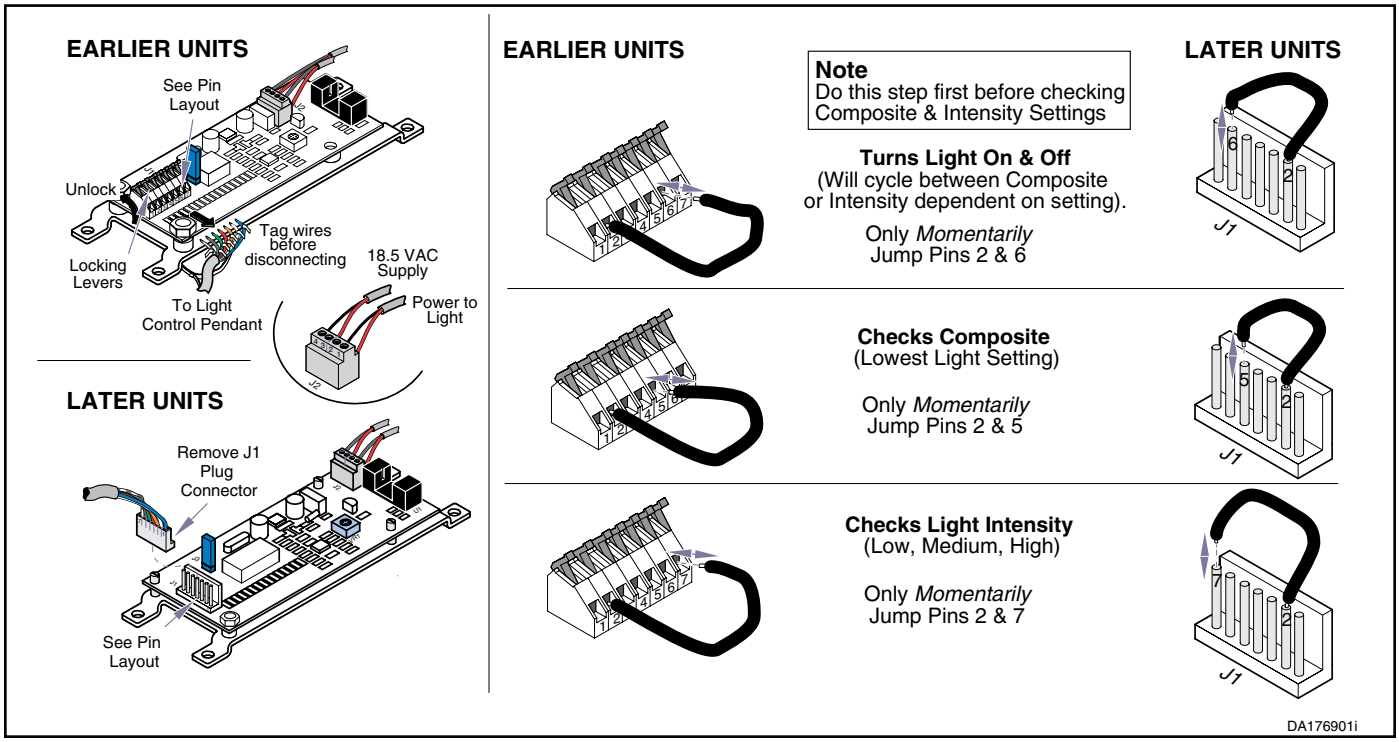


Figure 4-22 Light Control PC Board

4.22 Disabling Auto On Mode

A. Disabling

(1) Turn OFF power to the unit

NOTE
On some units, end cap removal differs slightly. Also, on some untis, both end caps may need removed.

(2) Remove screw (1, Fig. 4-20) and arm end cap (2) from light arm channel (3).

(3) Slide light arm cover (4) backward approximate ly 12 in. to gain access to light control board.

EQUIPMENT ALERT
To prevent loss of J3 Jumper when in the Disabled mode, assure the jumper is affixed to one of the two pins on J3 connector.

(4) To disable the Auto On Mode, remove the Jump er (Fig. 4-23) from J3, two pin connector, and insert it on just one of the pins.

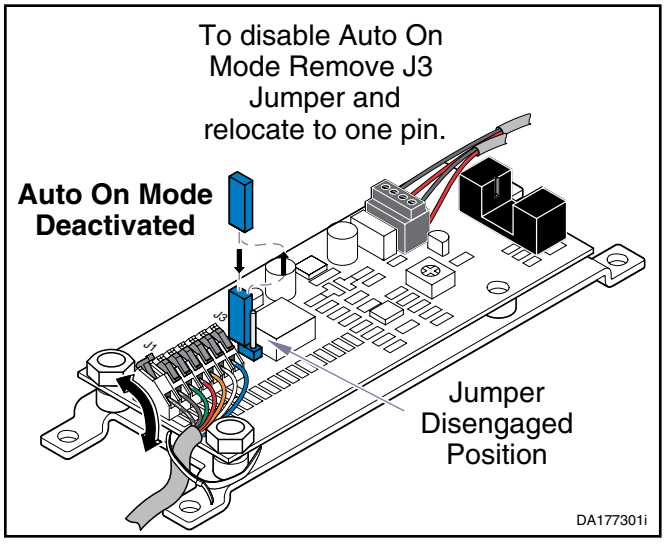

To disable Auto On Mode Remove J3 Jumper and relocate to one pin.
Auto On Mode Deactivated
J3
Jumper Disengaged Position
DA177301i

Figure 4-23
Light Contol PC Board

4.23 Circuit Breaker Reset / Fuse Replacement

A. Reset or Replacement

NOTE
There is a circuit breaker and two line fuses to check; the transformer output circuit breaker which can be reset and two transformer line input fuses which are one time use and must be replaced if blown.

(1) Remove junction box cover (Refer to para 4.2

WARNING
Always disconnect electrical power from the unit before removing any of the unit's covers/ shrouds or making any repairs to prevent the pos sibility of electrical shock. Failure to comply with these instructions could result in severe personal injury.

(2) Unplug power cord of universal power supply from outlet receptacle.

EQUIPMENT ALERT
Do not just reset circuit breaker or replace blown fuse. First, determine reason why circuit breaker tripped or fuse opened. Failure to do so could result in damage to unit.

(3) Check position of white reset button (1, Figure 4-24) of circuit breaker. If reset button is flush, the circuit breaker is not tripped. If reset button is protruding, press the reset button to reset the circuit breaker.

(4) Using a screwdriver, gently depress fuse cap (2) and then rotate 1/4 turn to left to free fuse cap. Pull fuse cap (2) from fuse body (3). Re peat step for remaining fuse.

(5) Remove fuse(s) (4) from fuse cap(s) and in spect. If a fuse is discolored, blackened, has burnt or hot look, or fuse element is burnt through, fuse is blown and must be replaced

(6) Insert fuse(s) (4) in fuse cap(s) (2).

(7) Insert fuse cap (2) into fuse body (3). Using a screwdriver, gently depress fuse cap and then rotate 1/4 turn to right to secure fuse cap. Re peat step for remaining fuse.

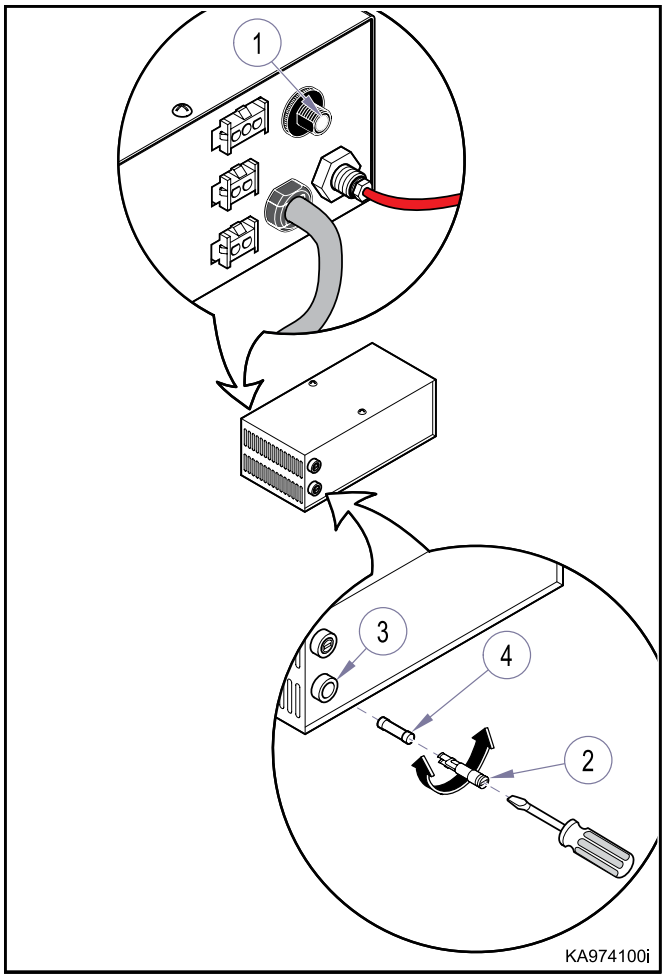


Figure 4-24 Circuit Breaker Reset / Fuse Replacement

(8) Plug power cord of universal power supply into outlet receptacle.

(9) Install junction box cover (Refer to para 4.2)

4.24 Flex Arm Spring Tension Adjustment

A. Adjustment

NOTE
On some units, both end caps will need to be re moved to gain access. The rear most end cap on these units will not be held in by screws, but by plastic buttons on the end cap itself.

(1) Remove screw (1, Figure 4-25) and arm endcap (2) from light arm (3).

(2) Slide light arm cover (4) backward approxi-mately 20 in. (51 cm) to gain access to tension adjustment nut (5).

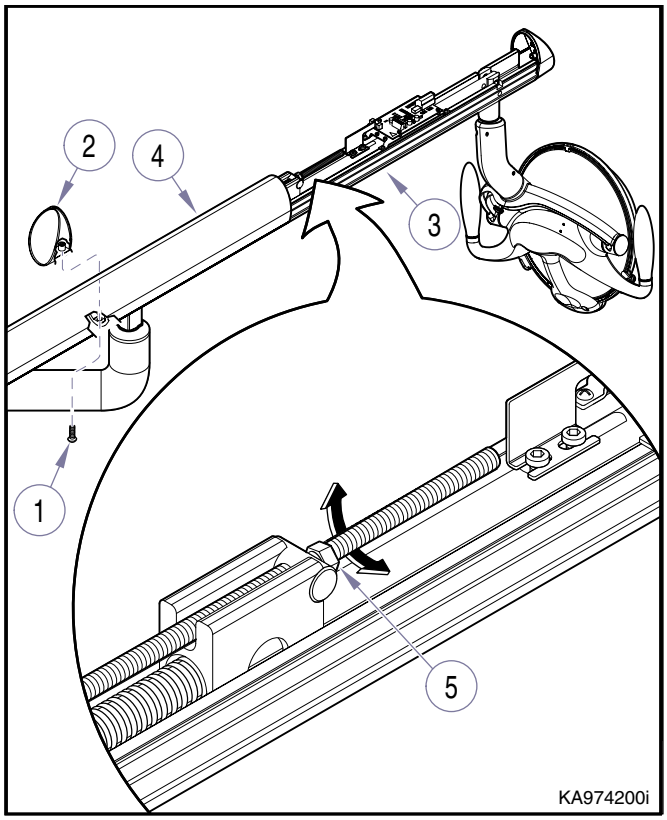


Figure 4-25 Flex Arm Spring Tension Adjustment

(3) Using a 1/2 in. open end wrench, adjust tension adjustment nut (5) to increase or decrease spring tension.

(4) Raise and lower light arm and then position light arm in a horizontal position and observe to verify that light arm is not stiff and is easy to use, yet will not drift downward by itself. Repeat step 3 as necessary.

(5) Slide light arm cover (4) back onto light arm (3) fully.

(6) Install arm endcap (2) on light arm (3) and se cure with screw (1).

4.25 Pivot Joint Tension Adjustment

NOTE
Consult the user of the light to determine the pre ferred tension adjustments.

A. Lighthead Pivot Joint Adjustment

(1) Use screwdriver to pry off screw cover (1, Figure 4-26).

(2) Using 5/64 in. Allen Wrench, loosen set-screw (2).

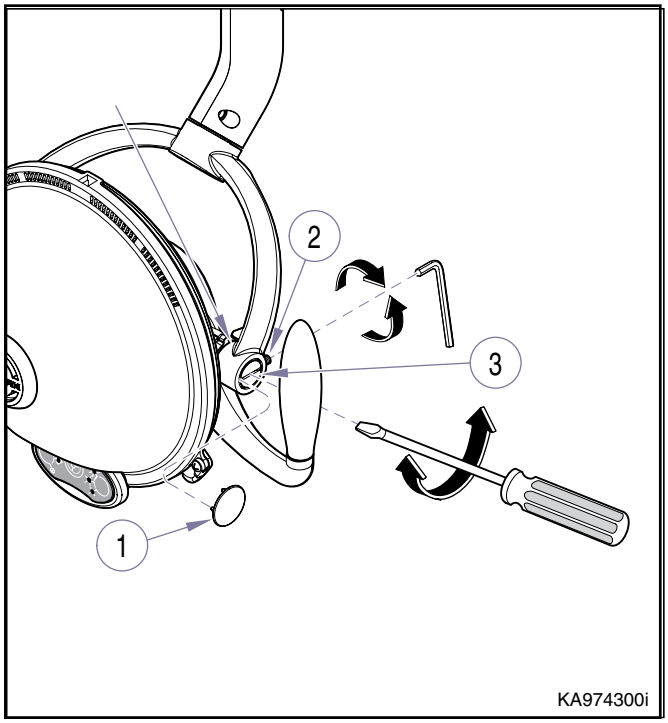


Figure 4-26 Lighthead Pivot Joint Adjustment

(3) Using screwdriver, adjust tension screw (3) until desired drag effect in pivot joint is achieved.

(4) Tighten setscrew (2) and install screw cover (1

B. Yoke Pivot Joint Adjustment

(1) ***To adjust drag at yoke pivot joint***, use 9/64 in. Allen Wrench adjust yoke tension screw (1, Figure 4-27) until desired drag effect in pivot joint is achieved.

(2) ***To adjust drag at arm pivot joint***, use 9/64 in. Allen Wrench to adjust arm tension screw (2) until desired drag effect in pivot joint is achieved

(3) Repeat steps 1 and 2 as necessary until desired drag tension in joints is achieved.

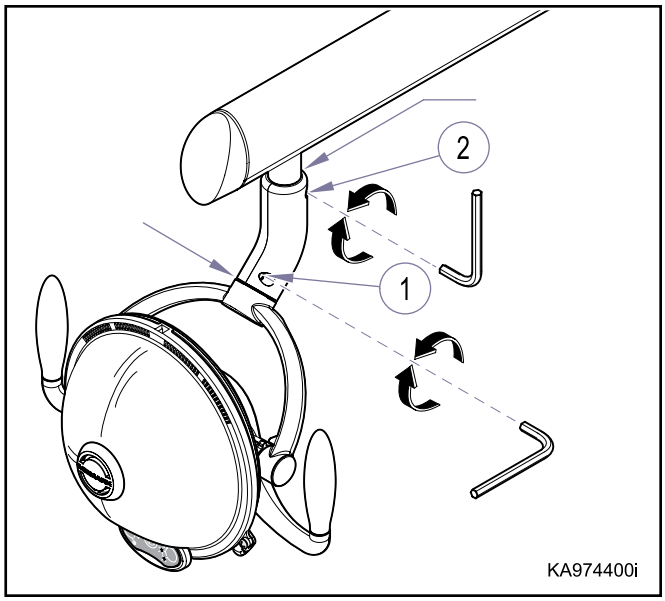


Figure 4-27 Yoke Pivot Joint Adjustment

4.26 LR Light Arm Leveling

A. Adjustment

Equipment Alert

If a delivery unit is also mounted on LR mounting bracket with LR light, care must be taken to make sure that leveling light arm does not put delivery unit arms “out-of-level”.

(1) Remove four screws (1, Figure 4-28) and con nection cover (2) from connection box (3).

(2) Position light arm (4) straight out from foot end of chair as shown in illustration.

(3) Tighten screw (5) as necessary

(4) Adjust three leveling screws (6) until light arm is plumb. When checking light arm to ensure it is plumb, place level at two spots on light arm 90o apart.

(5) Install connection cover (2) on connection box (3) and secure with four screws (1).

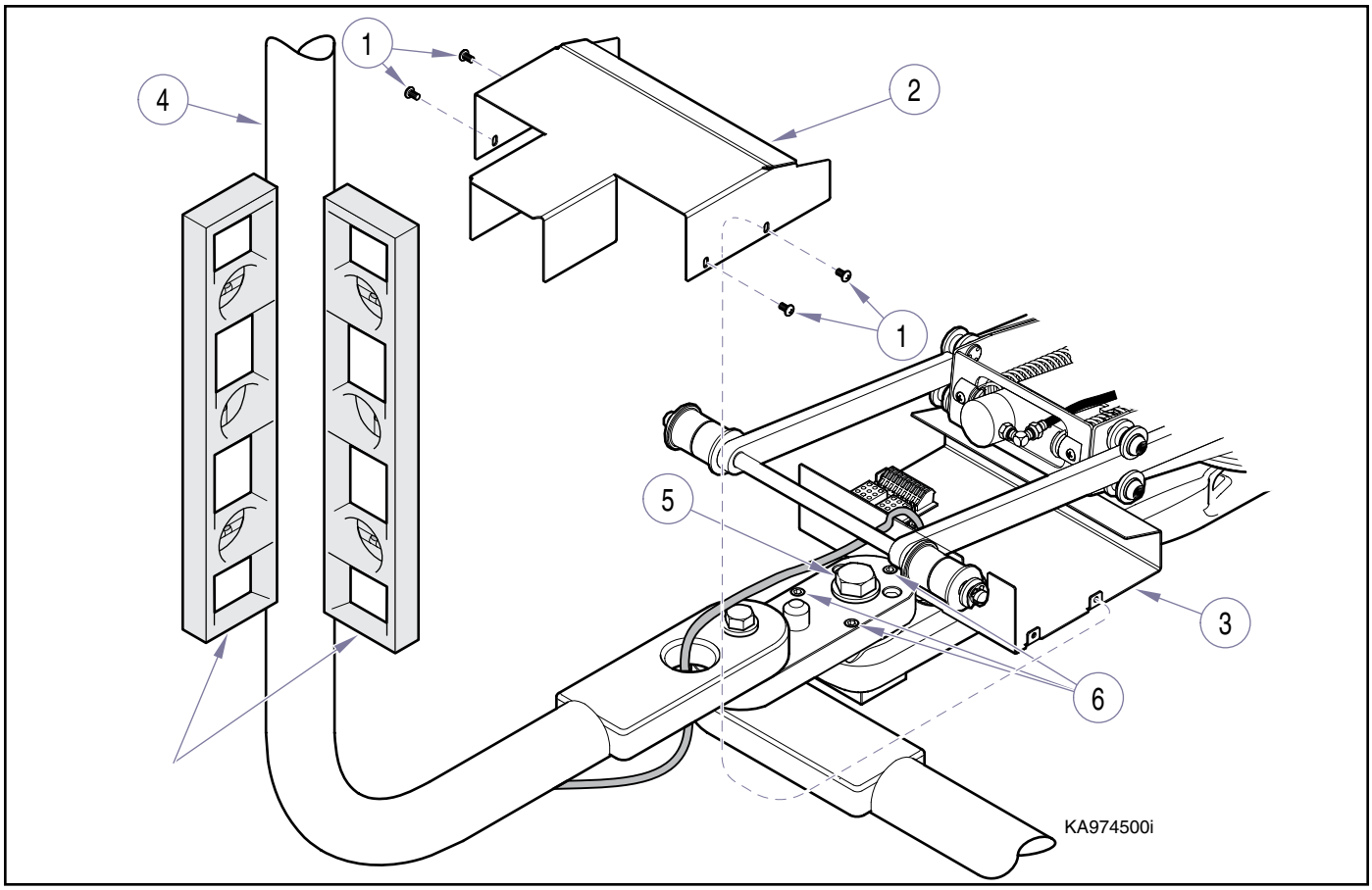


Figure 4-28 LR Light Arm Leveling

4.27 Console Light Arm Leveling

A. Adjustment

> **Equipment Alert**
> If a delivery unit is also mounted on console which has a light system, care must be taken to make sure that leveling light arm does not put delivery unit arms “out-of-level”.

(1) Remove LH and RH console covers (1, Figure 4-29) from console frame (2) by pulling outward on bottom of console covers until they “pop” loose.

(2) Loosen eight leveling screws (3) until they are fully retracted.

(3) Using a level, position light arm (4) so that it is plumb; then adjust eight leveling screws (3) until they are contacting post (A) of console frame (2).

(4) Adjust eight leveling screws (3) as necessary to fine tune leveling of light arm (4). When check ing light arm to ensure it is plumb, place level at two spots on light arm 90o apart.

(5) Slide top of LH console cover (1) under top cover (5); then align three ball studs (B) on console cover with three stud fasteners (C) on console frame (2).

(6) Push gently inward on console cover (1) until it “snaps” into place. Repeat steps 5 and 6 for RH console cover.

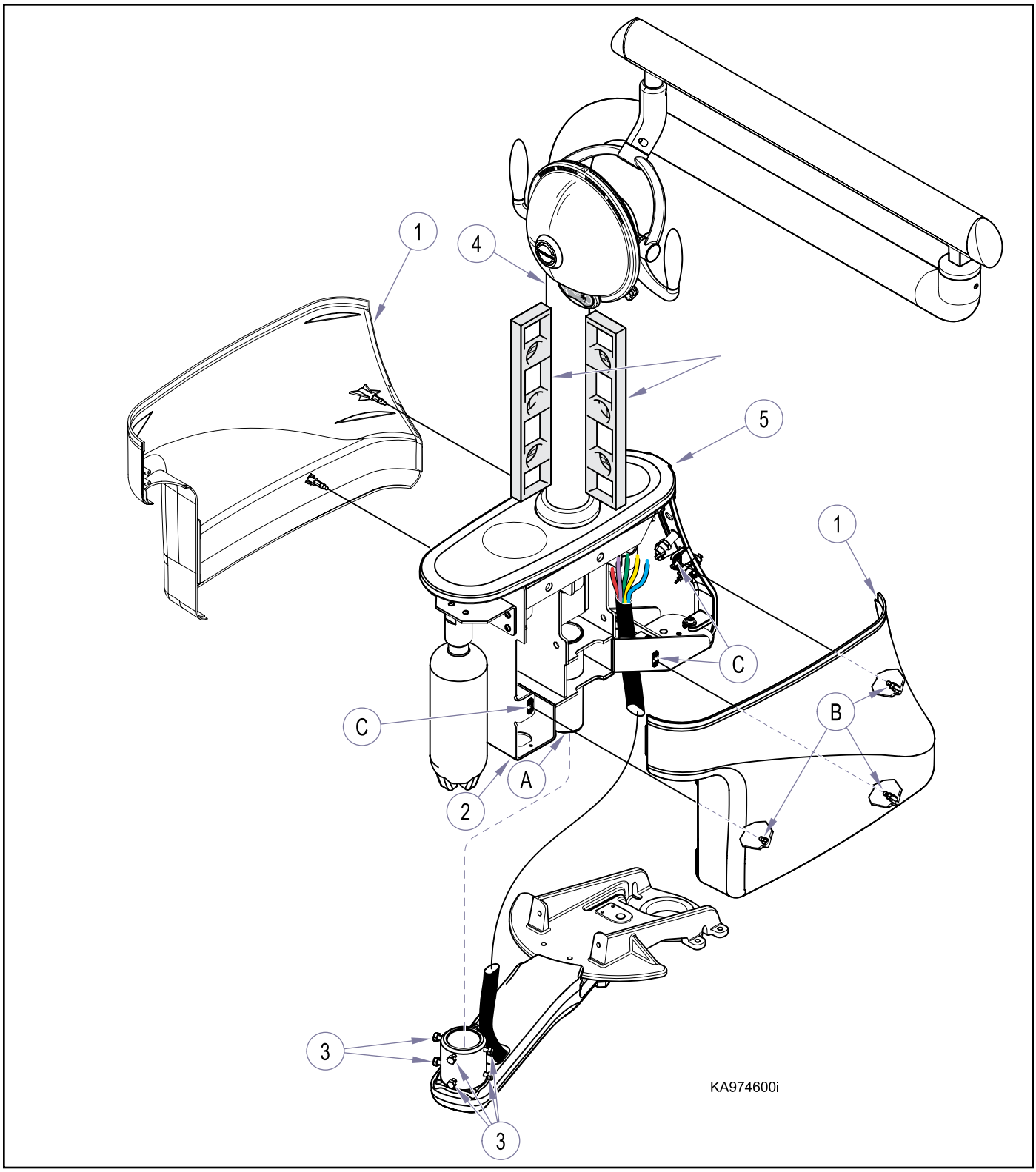


Figure 4-29 Console Light Arm Leveling

4.28 Ceiling Light Arm Leveling

A. Adjustment

WARNING

Always disconnect electrical power from the unit before removing any of the unit's covers/shrouds or making any repairs to prevent the possibilty of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(1) Turn OFF facility power breaker so there is no power to light unit.

(2) Loosen two setscrews (1, Figure 4-30) and lower ceiling cover (2) down out of way.

(3) Loosen three jam nuts (3).

(4) Place level on suspension tube (4) and adjust three hex nuts (5) until suspension tube is plumb; then tighten three jam nuts (3).

(5) Position ceiling cover (2) up against ceiling and then secure in position with two setscrews (1).

(7) Turn ON facility power breaker so there is power to light unit.

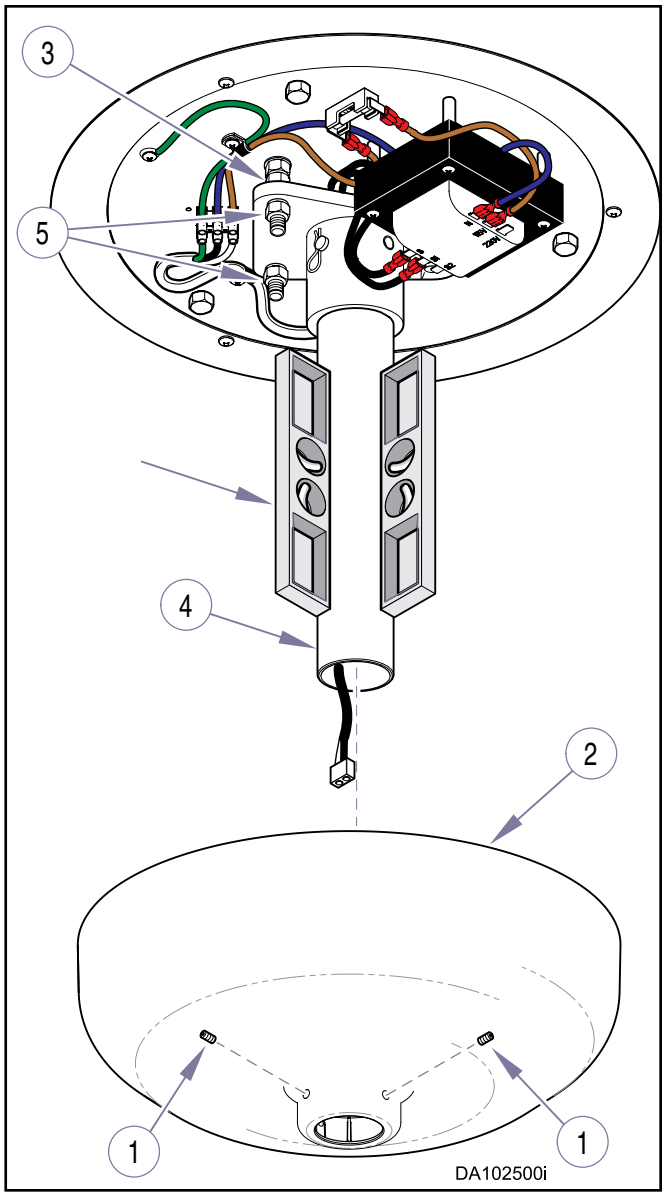


Figure 4-30 Ceiling Light Leveling

SECTION IV
MAINTENANCE / SERVICE

Midmark Corporation
60 Vista Drive
Versailles, OH 45380 USA
1-800-643-6275
1-937-526-3662
www.midmark.com